With respects of
Sereno Watson

George E. Davenport
1923.

CONTRIBUTIONS TO AMERICAN BOTANY. XI.

I. List of Plants from Southwestern Texas and Northern Mexico, collected chiefly by Dr. E. Palmer in 1879–80. — II. Gamopetalæ to Acotyledones.

II. Descriptions of some New Western Species.

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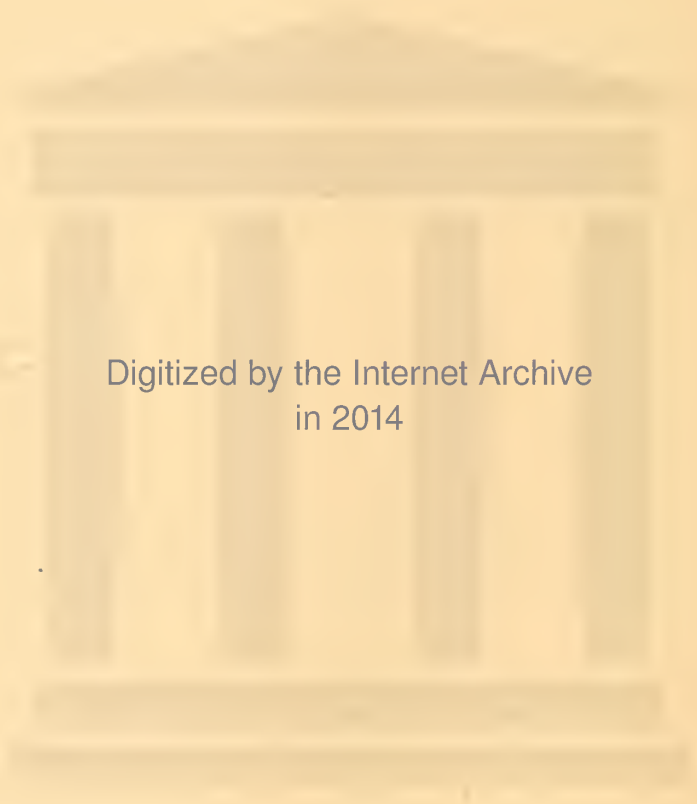

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X.

CONTRIBUTIONS TO AMERICAN BOTANY.

By Sereno Watson.

Presented May 29th, 1883.

1. *List of Plants from Southwestern Texas and Northern Mexico, collected chiefly by Dr. E. Palmer in* 1879–80.— II. *Gamopetalæ to Acotyledones.*

[Continued from Vol. XVII., page 361.]

Viburnum prunifolium, Linn. Kendall or Wilson County, Texas (387).

Viburnum membranaceum, Benth. & Hook. Caracol Mountains, Coahuila (388).

Symphoricarpus microphyllus, HBK. A pubescent form, from the Sierra Madre, south of Saltillo (2118), and wholly glabrous, from Lerios in the high mountains east of that city (390); 296 Parry & Palmer.

Lonicera albiflora, Torr. & Gray. In the Sierra Madre, south of Saltillo (389).

Lonicera pilosa, Willd. Sparingly collected in the same region; mountains near San Luis Potosi (733 Schaffner); Guanajuato (Dugès); 297 Parry & Palmer. The calyx-limb is usually glandular-hispid and the corolla villous. Dugès' specimen is glabrous throughout and probably represents *L. tubulosa*, Benth. All have the interior of the corolla-tube villous. *L. Moçiniana*, DC., is doubtless *L. involucrata*, Banks.

Cephalanthus occidentalis, Linn. At Uvalde, Texas (391).

Bouvardia angustifolia, HBK. (?) In the mountains east of Saltillo (391). Apparently the same as 47, 316 and 650 of Gregg's collection, 236 Wright (referred to *B. hirtella*), and Eaton & Edward's specimens from near Monterey (referred to *B. triphylla*). The specimens collected in Arizona by Wright (1116, in part), Rothrock (179), Lemmon (167), and Pringle (distributed as *B. Jacquini*), may

be the same, but are somewhat more glabrous, the leaves broader, and the corolla more elongated. The species of this genus are very poorly defined and greatly need revision.

Bouvardia triphylla, Salisb. At Soledad, Coahuila (2091), a form with the acuminate lanceolate leaves in fours. Nearly the same as 940 Thurber, from Sonora, and specimens collected by Graham at Tlalpujahua, and probably DeCandolle's *B. quaternifolia*. A single specimen with leaves in threes was found in the Caracol Mountains, having the corolla-lobes unusually long (2 lines or more).

Bouvardia hypoleuca, Benth. In sandy localities near Morales, San Luis Potosi (712 Schaffner); 298 Parry & Palmer.

Oldenlandia ovata. Annual, low, weak and slender, diffusely branching: leaves ovate to ovate-lanceolate, more or less abruptly contracted into a narrow petiole, acute, glabrous or slightly pubescent, 2 to 5 lines long: pedicels axillary and terminal, 2 to 6 lines long: calyx-lobes broad; corolla 1 to 1½ lines long: capsule hemispherical, rounded at base, not exceeding the calyx-teeth: seeds numerous, angled.— At Guajuco, Nuevo Leon (399); 200 Ervendberg, and 676½ Parry & Palmer. Differing from *O. microtheca* in its foliage and laxer habit, its smaller flowers not paniculate, the broader and obtuser calyx-teeth, and more numerous, smaller and less flattened seeds.

Houstonia angustifolia, Michx. A tall diffusely branched form from Georgetown, Texas (396), and from Monterey, Nuevo Leon (2116). 614 Schaffner, from the San Miguelito Mountains, is a low form with rather broad leaves. — Var. scabra, from the Caracol Mountains (410), is somewhat scabrous, and the short corolla is hirsute in bud toward the apex; capsules large.

Houstonia longipes. Annual, slender, diffusely branched, glabrous, the stems nearly terete: leaves revolute-filiform, 3 to 6 lines long: flowers on slender elongated pedicels (3 to 12 lines long): calyx a line long or less, with narrow lobes; corolla 3 lines long, with very slender tube and broad limb pubescent within: capsule short, not exceeding the calyx, round-ovate, very abruptly contracted at base, few- (about 10-) seeded. — From the mountains northeast of Monclova, Coahuila (394), and from Monterey, Nuevo Leon (395), and collected also by Dr. Gregg at Cerralbo. It has the habit of *H. asperuloides*, but the capsule is very different.

Houstonia Palmeri, Gray in Proc. Amer. Acad. 17. 202. At Lerios (397) and in the mountains east of Saltillo (2117), and in the Sierra Madre, south of Saltillo (398).

Houstonia acerosa, Gray, l. e., 203. (*Hedyotis acerosa*, Gray. *Mallostoma acerosa*, Hemsl.) In the Caracol Mountains, at Soledad (401), and at Juraz, Coahuila (402). Also a form with broader leaves, and more conspicuous stipules uniting their bases, from the Sierra Madre, south of Saltillo (400), and from the mountains eastward (403); 302 Parry & Palmer.

Houstonia fasciculata, Gray, l. e. In the mountains northeast of Monclova (404), and at Saltillo, Coahuila (406).

Basanacanthia (?) reticulata. A low stout unarmed shrub, the leaves and younger branches densely covered with a short spreading pubescence: leaves ovate to oblong-ovate or oblanceolate, obtuse or acutish, petiolate, 1 to 3 inches long, prominently reticulate-veined beneath; stipules submembranous, broadly triangular-lanceolate: flowers dioecious, glabrous, the staminate nearly sessile in short axillary corymbs, the pistillate solitary, terminal on short branchlets: staminate calyx very short (1½ lines long), the linear teeth exceeding the campanulate tube; corolla white, 6 to 9 lines long, the narrow tube exceeding the lobes; stamens 5, very short in the glabrous throat; style of the abortive ovary equalling the tube, 2-cleft: corolla of fertile flower unknown; the globose ovary crowned by the five persistent lanceolate calyx-teeth; fruit 9 lines in diameter, 2-celled, the numerous horizontal seeds immersed in the pulpy placentæ. — At San Lorenzo de Laguna, Coahuila (393). A peculiar species, probably to be referred to this genus, which however is scarcely distinct from *Randia*.

Randia Xalapensis, Mart. & Gal. At Guajuco, Nuevo Leon (158).

Diodia teres, Walt. At Sutherland Springs, Texas (409).

Diodia prostrata, Swartz, var. longiseta, DC. In San Luis Potosi Valley (1056 Schaffner, in part), and in the Morales Mountains (839 Schaffner); 303 and 304 Parry & Palmer. Probably distinct from the West Indian form.

Diodia tricocca, Torr. & Gray. At Sutherland Springs, Texas (408), and at Corpus Christi, near the beach (1186); also at Monterey, Nuevo Leon (1187).

Diodia tetracocca, Hemsl. Diag. Pl. Nov. 2. 32, and Bot. Biol. Centr.-Amer. 2. 56, t. 40, fig. 10–15. In San Luis Potosi Valley (1056 Schaffner, in part), and in the San Miguelito Mountains (838 Schaffner).

Mitracarpum breviflorum, Gray. In San Luis Potosi Valley (1035 Schaffner); 305 Parry & Palmer.

SPERMACOCE PODOCEPHALA, Benth. At Corpus Christi, Texas (470), and at San Luis Potosi (836 and 1057 Schaffner); 307 Parry & Palmer, and 100 Bourgeau, the latter referred by Hemsley to *S. verticillata*, which is a stouter woody-based species, with the flowers in close verticils as well as in terminal heads.

SPERMACOCE SUBULATA, Pav. At San Luis Potosi (837 Schaffner); 231½ and 306 Parry & Palmer.

RICHARDSONIA SCABRA, St. Hil. At Lamar, on Copano Bay, Texas (407).

GALIUM PROLIFERUM, Gray. Guajuco, Nuevo Leon (411).

GALIUM UNCINULATUM, DC. At Guajuco, Nuevo Leon (412), and near Morales, San Luis Potosi (840 Schaffner, and 179 of his previous collection), and the same as Botteri's Orizaba specimens under several numbers (188, 945, and 1174 in Herb. Gray). The stem is often nearly glabrous throughout. — Var. OBSTIPUM. (*G. obstipum*, Schlecht.) More pubescent throughout. From Lerios (413), the Caracol Mountains (414), and Saltillo. This form is also common in Texas. 886 Ghiesbreght, referred to the Peruvian *G. canescens*, is the same.

GALIUM MEXICANUM, HBK. Near Guanajuato (Dugès). *G. leucotrichum*, Hemsl., appears to be identical with *G. hypadenium*, Schauer.

GALIUM ASCHENBORNII, Schauer. In the San Miguelito Mountains, San Luis Potosi (841 Schaffner).

GALIUM MICROPHYLLUM, Gray. At Soledad (415) and at Lerios, Coahuila, and near Morales, San Luis Potosi (492ª Schaffner); 309 and 310 Parry & Palmer.

GALIUM POLYPLOCUM. (*Relbunium polyplocum*, Hemsl. Diag. Pl. Nov. 3. 53, and Bot. Biol. Centr.-Amer. 2. 63.) Near Morales, San Luis Potosi (842 Schaffner); 308 Parry & Palmer.

PHYLLACTIS PRATENSIS, Benth. & Hook. At Morelia, Guanajuato (Dugès); popularly known as "Ucuares," and the tuberous root a favorite article of food.

VALERIANA TOLUCANA, DC. In the Sierra Madre, south of Saltillo (416); 312 Parry & Palmer.

VALERIANA SORBIFOLIA, HBK. About San Luis Potosi (107 Schaffner), and Guanajuato (Dugès); 311 and 1071 Parry & Palmer. 2133 Seemann, from the Sierra Madre, is the same.

The following determinations of the *Compositæ* of Dr. Palmer's collection are by Dr. Gray. For his descriptions of the new species, and for other notes, reference is made to a subsequent article in this volume.

Vernonia Lindheimeri, Gray. At Uvalde, Texas (421).

Vernonia Ervendbergii, Gray, Proc. Amer. Acad. 17. 203. At Soledad, Coahuila (750).

Vernonia altissima, Nutt., var. grandiflora, Gray. At Sutherland Springs, Texas (751).

Vernonia angustifolia, Michx., var. Texana, Torr. & Gray. In Western Texas (752).

Vernonia Greggii, Gray, var. Palmeri, Gray, l. c. 204. At Lerios, Coahuila (753).

Vernonia Schaffneri, Gray, l. c. Mountains near Morales, San Luis Potosi (317 Schaffner).

Ageratum corymbosum, Zucc. At Saltillo (428), and a variety at Monclova, Coahuila (427).

Stevia salicifolia, Cav. In Coahuila (431); 321 Parry & Palmer.

Stevia Berlandieri, Gray. At Guajuco, Nuevo Leon (432).

Stevia Eupatoria, Willd. (Including *S. purpurea*, Lag.) At Lerios, Coahuila (433, 433ª).

Stevia paniculata, Lag. At Parras, Coahuila (439).

Eupatorium serotinum, Michx. At Sutherland Springs, Texas (423), and in Mexico (424).

Eupatorium betonicum, Hemsl. At Monclova, Coahuila (425).

Eupatorium cælestinum, Linn. At Georgetown, Texas (426).

Eupatorium incarnatum, Walt. In the Caracol Mountains, Coahuila (429).

Eupatorium dissectum, Gray. In the Sierra Madre, south of Saltillo (430).

Eupatorium azureum, DC. At Guajuco (434), and Monterey, Nuevo Leon (437, 438); 341 Parry & Palmer. The Monterey specimens, like those of Gregg's early collection (52), exactly match 1380 Berlandier, upon which *E. azureum* was founded. Upon Berlandier's ticket in herb. DC. "flores azurei" is written, hence the specific name. But Gregg noted the flowers as "purplish," and Palmer (upon the Guajuco specimen, which is evidently a form of the same) as "creamy white."

Eupatorium altissimum, Linn. At Lamar, on Copano Bay, Texas (435).

Eupatorium petiolare, Moç. At Monterey, Nuevo Leon (440).

Eupatorium (Phanerostylis) Coahuilensis, Gray, Proc. Am. Acad. 17. 205. In the Sierra Madre, south of Saltillo (453).

Eupatorium (Hebeclinium) ——? Mexico, locality uncertain (2080).

Eupatorium ——? An uncertain ageratoid species. At Saltillo, Coahuila (436).

Mikania scandens, Willd. In Southwestern Texas (441).

Brickellia odontophylla, Gray, l. c. 206. In the Sierra Madre, south of Saltillo (442).

Brickellia cylindracea, Gray, var. laxa, Gray, l. c., 207. At Georgetown (446), and a more branched form at Bluffton, Texas (445).

Brickellia Riddellii, Gray. At Georgetown (448), and Uvalde, Texas (449).

Brickellia laciniata, Gray. In the mountains east of Saltillo, Coahuila (450).

Brickellia Coulteri, Gray. With entire leaves. At Parras, Coahuila (451).

Brickellia Palmeri, Gray, probably. Mexico, locality uncertain (2079).

Barroettea subuligera, Gray, Proc. Am. Acad. 15. 29, and 17. 205. At Soledad, Coahuila (452).

Kuhnia eupatorioides, Linn. At San Antonio and other localities in Western Texas (444, 447), and a broad-leaved form (443).

Kuhnia rosmarinifolia, Vent. At several localities in Western Texas and Coahuila (454, 455, 456, 457).

Liatris punctata, Hook. In the Caracol Mountains (418), at Monclova (419), and Juraz, Coahuila (420); 1085 Parry & Palmer.

Gymnosperma corymbosum, DC. At various localities in Western Texas and Mexico (458, 459, 461, 464, 465).

Gutierrezia microcephala, Gray. At San Lorenzo de Laguna (460), and at Saltillo, Coahuila (463).

Gutierrezia Texana, Torr. & Gray. At San Antonio, Texas (462, 466).

Grindelia Arizonica, Gray, l. c. 208. In Coahuila (467).

Grindelia squarrosa, Dun. (?) At Sutherland Springs, Texas (468). Too immature for determination; perhaps *G. lanceolata*, Nutt.

Grindelia inuloides, Willd. At Lerios, Coahuila (471). Also var. microcephala, Gray, in Southwestern Texas (469, 2078).

Grindelia costata, Gray, l. c. 208. In Mexico (472).

Heterotheca Lamarckii, DC. (*H. scabra*, DC.) At Laredo, on the Rio Grande, Texas (491), and at Monterey, Nuevo Leon (481).

Heterotheca Chrysopsidis, DC. (?) At Saltillo, Coahuila (492).

Chrysopsis villosa, Nutt., var. canescens, Gray. In Western Texas (482), and a form also from Lerios, Coahuila (480).

Chrysopsis pilosa, Nutt. Southwestern Texas (2077).

Xanthisma Texanum, DC. In Western Texas (746, 747).

Aplopappus rubiginosus, Torr. & Gray, var. (*A. phyllocephalus*, DC.) At Corpus Christi, Texas (473).

Aplopappus spinulosus, DC. At Monterey, Nuevo Leon (474), and Soledad, Coahuila (477).

Aplopappus divaricatus, Gray. From several localities in Southwestern Texas (475, 476, 478, 479).

Bigelovia veneta, Gray. At Parras, Coahuila (483); 375 Parry & Palmer.

Bigelovia Drummondii, Gray, var. (?) At Guadalupe, Texas (486), and at Soledad, Coahuila (485). The specimens may belong to *B. Wrightii*, Gray.

Bigelovia coronopifolia, Gray. At Eagle Pass, Texas (487).

Solidago Canadensis, Linn., var. canescens, Gray. At San Antonio, Texas (488).

Solidago nemoralis, Ait. Southwestern Texas (2076). Also var. incana, Gray. In the Sierra Madre, south of Saltillo (489); a rigid form.

Solidago velutina, DC. At Parras, Coahuila (490).

Aphanostephus humilis, Gray. Between the Frio and Nueces Rivers, Texas (494), and at Monclova, Coahuila (529); 378 Parry & Palmer.

Aphanostephus Arkansanus, Gray. At Sutherland Springs (497), and at Bluffton, Texas (523). Also var. Hallii, Gray; at Corpus Christi, Texas (502).

Aphanostephus ramosissimus, DC. In Southwestern Texas (521), and at Juraz, Coahuila (532).

Townsendia Mexicana, Gray. At Saltillo, Coahuila (499).

Chætopappa (Distasis) modesta, Gray. At various localities in Mexico (500, 503 to 508).

Psilactis brevilinguata, Schultz Bip. In the Sierra Madre, south of Saltillo (515, 528).

Dichætophora campestris, Gray. At Monterey (501).

Aster ericæfolius, Rothr. In the Sierra Madre, south of Saltillo (484). A very slender form.

Aster phyllolepis, Gray. Western Texas (498).

Aster (Orthomeris) Palmeri, Gray, Proc. Am. Acad. 17. 209. At Corpus Christi (509), and at Eagle Pass, Texas (516).

Aster multiflorus, Ait. In Western Texas (517), and in Mexico (2075). Also a variety (*A. hebecladus*, DC.) at Uvalde (518).

Aster divaricatus, Nutt. At Sutherland Springs, Texas (519, 520, 522), and a large-leaved form at Saltillo, Coahuila (526).

Aster Drummondii, Lindl. In Western Texas (524, 525).

Aster tanacetifolius, HBK. Locality uncertain (527).

Erigeron dryophyllus, Gray, l. c. 210. At Guajuco, Nuevo Leon (495).

Erigeron Palmeri, Gray. A hirsute form, at Saltillo (496), and Lerios, Coahuila.

Erigeron pubescens, HBK. In Mexico (530, 531, 2074).

Erigeron Canadensis, Linn. (*E. strictus*, DC.) In Western Texas (2073).

Conyza subdecurrens, DC. At Monclova (534), and in the mountains north of that place (533).

Baccharis Texana, Torr. & Gray. In Southwestern Texas (510, 511, 535, 536).

Baccharis pteronioides, DC. (*B. ramulosa*, Gray.) In Mexico (513, 514).

Baccharis Bigelovii, Gray. In the Caracol Mountains, Coahuila (537).

Baccharis angustifolia, Michx. In Western Texas (538), and at Parras (541, 542).

Baccharis glutinosa, Pers. (*B. Alamani*, etc., DC.) At Laredo, Texas (539), and at Parras, Coahuila (540).

Pluchea camphorata, DC. At Sutherland Springs, Texas (543), and in the mountains north of Monclova (544).

Pluchea odorata, Cass. At Monterey, Nuevo Leon (545).

Pluchea subdecurrens, DC., var. canescens, Gray. Same locality (546).

Pterocaulon virgatum, DC. At Sutherland Springs, Texas (422).

Evax multicaulis, DC. Between the Frio and Nueces Rivers, Texas (1146), and at Juraz, Coahuila (547).

Gnaphalium Sprengelii, Hook. & Arn. At San Lorenzo de Laguna, Coahuila (548, 552).

Gnaphalium Wrightii, Gray, l. c. 214. West of San Antonio, Texas (519).

Gnaphalium decurrens, Ives. At Uvalde, Texas (550).

Gnaphalium oxyphyllum, DC. In the Sierra Madre, south of Saltillo (551); 417 Parry & Palmer.

Gnaphalium semiamplexicaule, DC. In the Caracol Mountains, Coahuila (553).

Gnaphalium purpurascens, DC. (*G. Schraderi*, DC., probably. *G. roseum*, HBK.?) In Coahuila (2071), and San Luis Potosi (223 Schaffner); 415 and 417½ Parry & Palmer.

Gnaphalium purpureum, Linn. In Mexico (2072).

Gnaphalium pannosum, Gray; *new sp.* San Luis Potosi (227 Schaffner); 420 Parry & Palmer.

Dicranocarpus parviflorus, Gray. At Monclova (641).

Melampodium cinereum, DC. In Southwestern Texas (555, 558). — Var. ramosissimum, Gray. (*M. ramosissimum*, DC.) At Laredo, on the Rio Grande (651), and other Texan localities (556, 557). — Var. argophyllum, Gray. In Mexico (2068).

Silphium asperrimum, Hook. At Georgetown, Texas (599).

Berlandiera tomentosa, Torr. & Gray, var. dealbata, Gray. In Western Texas (561).

Engelmannia pinnatifida, Torr. & Gray. In Mexico (562).

Parthenium incanum, HBK. (*P. ramosissimum*, DC.) At several localities in Mexico (563, 564, 565).

Parthenium argentatum, Gray. In Mexico (566, 646).

Parthenium lyratum, Gray, *ined.* In Mexico (647).

Parthenium confertum, Gray, Proc. Am. Acad. 17. 216. At Parras, Coahuila (648); 86 Gregg.

Iva angustifolia, Nutt. In Western Texas (567).

Iva ambrosiæfolia, Gray. In Mexico (573, 574).

Iva dealbata, Gray. At Soledad (737), and Monclova (738).

Hymenoclea monogyra, Gray. In Western Texas (568).

Ambrosia artemisiæfolia, Linn. In Mexico (569).

Ambrosia psilostachya, DC. In Mexico (570).

Ambrosia aptera, DC. In Western Texas (571).

Franseria tenuifolia, Gray. In Western Texas (572, 574).

Zinnia pauciflora, Linn. In Western Texas (571[bis], 575).

Zinnia juniperifolia, Gray. In the Sierra Madre, south of Saltillo (576). With leaves, heads, and rays larger than in Gregg's specimens, much larger than in the poor specimens of Berlandier.

Zinnia acerosa, Gray. In Coahuila (577, 578).

ZINNIA ANOMALA, Gray. Sierra Madre, south of Saltillo (581).

SANVITALIA ANGUSTIFOLIA, Engelm. At Parras (591), and a form with the chaff of the receptacle more cuspidate, at Saltillo (588).

HELIOPSIS PARVIFOLIA, Gray, a cinereous form. In the mountains east of Saltillo (586).

ECLIPTA ALBA, Hassk. (*E. erecta* and *E. prostrata*, Linn.) In Western Texas (582).

ZALUZANIA TRILOBA, Pers. At Parras, Coahuila (592).

ZALUZANIA MEGACEPHALA, Schultz Bip. (?) But quite different from *Z. angusta*, and the rays inclined to be sterile. Pubescence of inflorescence and lower surface of the upper leaves aurate, as noted by Palmer. In the Sierra Madre, south of Saltillo (734).

VARILLA MEXICANA, Gray. At Parras, Coahuila (680).

VARILLA TEXANA, Gray. At Eagle Pass, Texas (739).

GYMNOLOMIA TENUIFOLIA, Benth. & Hook. At Parras and other Mexican localities (620, 621, 622, 623).

SCLEROCARPUS UNISERIALIS, Benth. & Hook. In Western Texas (593, 594, 595), and Mexico (596).

TETRAGONOTHECA TEXANA, Engelm. & Gray. In Western Texas (583), at Soledad (2065), and mountains north of Monclova (559).

TETRAGONOTHECA LUDOVICIANA, Gray, var. REPANDA, Gray. West of San Antonio, Texas (560, 609).

BORRICHIA FRUTESCENS, DC. In Western Texas (587).

ZEXMENIA BREVIFOLIA, Gray. At Eagle Pass, Texas (624), and at Soledad, Coahuila (625).

ZEXMENIA HISPIDA, Gray. (*Z. Texana*, Gray.) In Western Texas (630), and at Soledad (631).

LEPACHYS PEDUNCULARIS, Torr. & Gray. Western Texas (718). A small form.

LEPACHYS COLUMNARIS, Torr. & Gray. Western Texas (719). Also var. PULCHERRIMA, Torr. & Gray, in Texas (720, 2085), and Mexico, a small and slender form (717).

VIGUIERA HELIANTHOIDES, HBK., var. (*V. laxa*, DC. *V. Texana*, Torr. & Gray.) Western Texas (603, 604), and in Mexico, a narrow-leaved form (614). The last is *V. brevipes*, DC.

VIGUIERA CANESCENS, DC. At San Lorenzo de Laguna, Coahuila (618).

VIGUIERA LINEARIS, Schultz Bip. (*Leighia linearis*, DC.) In Mexico (626).

HELIANTHUS ANNUUS, Linn. (*H. lenticularis*, Dougl.) In Mexico (600), and a depauperate form (2070).

Helianthus Maximiliani, Schrad. Localities uncertain (602, 2066).

Helianthus laciniatus, Gray. At Parras (605), San Lorenzo de Laguna (606), and Saltillo, Coahuila (607).

Helianthus debilis, Nutt., var. cucumerifolius, Gray. Western Texas (608).

Helianthus ciliaris, DC., var. With linear leaves. At Juraz, Coahuila (616).

Flourensia cernua, DC. In Mexico (740).

Encelia Mexicana, Mart. In the Sierra Madre, south of Saltillo (493); 471 Parry & Palmer.

Encelia calva, Gray. At Bluffton (610), San Antonio (611), and Eagle Pass, Texas (613).

Encelia subaristata, Gray. At Guadalupe, Texas (612), and in the Caracol Mountains, Coahuila (615).

Encelia microphylla, Gray. In Mexico (589).

Heliantiella Mexicana, Gray. In the Sierra Madre, south of Saltillo (601); a broader-leaved and more hispid form than the original specimens from San Luis Potosi. Collected also long ago by Gregg in the same district.

Verbesina Coahuilensis, Gray; *new sp.* In the mountains east of Saltillo, Coahuila (584, 619).

Verbesina Wrightii, Gray, var. In the Sierra Madre, south of Saltillo (585, 597), and at Parras, Coahuila (598).

Verbesina encelioides, Benth. & Hook. In Western Texas (617), and in Coahuila (2063, 2064).

Verbesina stricta, Gray. (*Actinomeris stricta*, Hemsl. Bot. Biol. Centr.-Amer. 2. 186.) In the Sierra Madre, south of Saltillo (627), and at Lerios (628).

Verbesina Virginica, Linn. At San Antonio (731), and Guadalupe, Texas (732). Also var. Palmeri, Gray, at Soledad, Coahuila (733).

Synedrella vialis, Gray, Proc. Am. Acad. 7. 217. (*Calyptrocarpus vialis*, Less. *Oligogyne Tampicana*, DC. *Blainvillea biaristata*, DC.) In Western Texas (2069), and Mexico (590); 443 Parry & Palmer.

Coreopsis cardaminefolia, DC. At Corpus Christi, Texas (635).

Thelesperma filifolium, Gray. In Western Texas (636).

Thelesperma subsimplicifolium, Gray. At Sutherland Springs, Texas (637), and in the Sierra Madre, south of Saltillo (638).

THELESPERMA GRACILE, Torr. & Gray. At Saltillo (639), and Parras, Coahuila (2061[bis]).

BIDENS CHRYSANTHEMOIDES, Michx. At Uvalde, Texas (633).

BIDENS HETEROPHYLLA, Ort. At Parras, Coahuila (634).

GALINSOGA PARVIFLORA, Cav. At the same locality (652); a variety without pappus in the ray.

TRIDAX PROCUMBENS, Linn. In Mexico (629, 2061).

RIDDELLIA ARACHNOIDEA, Gray. In Mexico, localities uncertain (678, 679, 2082).

HYMENOPAPPUS FLAVESCENS, Gray. In the Sierra Madre, south of Saltillo (650).

HYMENOPAPPUS ARTEMISIÆFOLIUS, DC. At Uvalde (2081).

BAHIA ABSINTHIIFOLIA, Benth. In Coahuila and Nuevo Leon, a narrow-leaved form, answering to the original (674), and a slightly broader-leaved form (672, 673). Also var. DEALBATA, Gray, from near Monclova.

FLORESTINA TRIPTERIS, DC. In Western Texas (653), and Coahuila (654).

POLYPTERIS TEXANA, Gray. (*Palafoxia Texana*, DC.) In Western Texas (642, 644, 2060), and at Soledad, Coahuila (645).

POLYPTERIS HOOKERIANA, Gray. (*Palafoxia Hookeriana*, Torr. & Gray.) In Western Texas (655).

POLYPTERIS CALLOSA, Gray. (*Palafoxia callosa*, Torr. & Gray.) At Bluffton, Texas (656).

PALAFOXIA LINEARIS, Lag. At Monclova, Coahuila (643). Apparently an annual-rooted form.

SARTWELLIA MEXICANA, Gray; *new sp.* At Monclova and San Lorenzo de Laguna, Coahuila (683, 687).

FLAVERIA LONGIFOLIA, Gray. (*Gymnosperma* (?) *oppositifolium*, DC.) At Parras, Coahuila (681, 685); 498 Parry & Palmer. The specimens with smaller heads come very near *F. linearis*, Lag., of the coast of Cuba, the Bahamas, and Florida.

FLAVERIA CHLORÆFOLIA, Gray. At Juraz and Parras, Coahuila (682, 2083).

FLAVERIA ANGUSTIFOLIA, Pers. At San Lorenzo de Laguna, Coahuila (684). A low and narrow-leaved variety.

FLAVERIA (BROTEROA) REPANDA, Lag. Near Parras (686). Sometimes confounded with *F. Contrayerba.*

POROPHYLLUM FILIFOLIUM, Gray; *new sp.* In the Sierra Madre, south of Saltillo (688). The specimens may be found mixed with a little *Thelesperma subsimplicifolium.*

Porophyllum amplexicaule, Engelm. At Parras and Soledad, Coahuila (689).

Porophyllum scoparium, Gray. (*P. Greggii*, Gray, in part.) At Parras, Saltillo, and Monterey (690 to 694).

Porophyllum macrocephalum, DC. At Soledad (704).

Nicolletia Edwardsii, Gray. At Monclova, Coahuila.

Dysodia pubescens, Lag. In the Sierra Madre, south of Saltillo (579, 580).

Dysodia chrysanthemoides, Lag. At Saltillo (695).

Hymenatherum pentachætum, DC. (*H. Berlandieri*, DC.) Various forms. In Western Texas (697), and in Coahuila and Nuevo Leon (696, 698, 2084).

Hymenatherum Wrightii, Gray. At Sutherland Springs (699), and Corpus Christi, Texas (700).

Hymenatherum gnaphaliopsis, Gray. At Monterey, Nuevo Leon (707).

Hymenatherum (Aciphyllæa) acerosum, Gray. At Parras (709), and Saltillo (710); the latter with an unusual appearance, having rather long primary leaves, and hardly any in axillary fascicles.

Tagetes lucida, Cav. In Coahuila (705, 706).

Chrysactinia Mexicana, Gray. In the Sierra Madre, south of Saltillo (708, 711).

Pectis prostrata, Cav. At Monclova (640).

Pectis angustifolia, Torr. At Saltillo and Monclova, Coahuila (701, 702).

Helenium tenuifolium, Nutt. At Sutherland Springs, Texas (712). — Also var. badium, Gray, with purplish-brown instead of yellow disk. At Bluffton, Texas (716). First distributed in Hall's Texan collection (364), and recently collected by Reverchon, in Southwestern Texas, with most of the lower leaves pinnately parted.

Helenium elegans, DC. (*H. microcephalum*, var. *bicolor*, Torr. & Gray.) A form with rays all yellow. At Sutherland Springs, Texas (713). On full comparison this proves to be sufficiently distinct from *H. microcephalum*. It has rather smaller and more globose heads and a more hemispherical receptacle, as well as a shorter pappus.

Helenium amphibolum, Gray. At Parras (714). 523 Parry & Palmer has been wrongly referred to this species. One of our specimens is *H. Mexicanum*, HBK., the other is *H. ooclinium*.

Helenium ooclinium, Gray. At Monclova (715). 346 Schaffner, from San Luis Potosi, appears to be the same; but if so the

character of the receptacle fails, for in this it is hemispherical, instead of ovate.

Helenium microcephalum, DC. At Bluffton, Texas (735). Depauperate specimens, but answering to 1429 Berlandier.

Amblyolepis setigera, DC. At Monterey, Nuevo Leon (724).

Gaillardia comosa, Gray; *new sp.* At Saltillo (721).

Gaillardia pulchella, Foug. At Monterey, (722). And var. picta, Gray; at Corpus Christi, Texas (729).

Gaillardia pinnatifida, Torr. At Parras (723). The long villi of the akene are in this species, as in *G. comosa* and *G. simplex*, inserted over the whole surface.

Gaillardia Mexicana, Gray; *new sp.* In the Sierra Madre, south of Saltillo (725), and at Lerios, Coahuila, a dwarf subcaulescent form (726).

Gaillardia simplex, Scheele. (*Agassizia suavis*, Gray & Engelm.) At Saltillo and Monclova (727, 728, 2086).

Gaillardia lanceolata, Michx. A depauperate slender form. At Sutherland Springs, Texas (730).

Actinella (Platylema) Palmeri, Gray; *new sp.* At Saltillo (554).

Actinella insignis, Gray; *new sp.* At Lerios, Coahuila (632).

Actinella scaposa, Nutt. At Monterey, Nuevo Leon. Also var. linearis, Nutt., in Western Texas and Coahuila (657, 658, 659).

Actinella linearifolia, Torr. & Gray. In Coahuila and Nuevo Leon (670, 671, 677).

Actinella odorata, Gray. At Laredo, Texas (742), and in Coahuila (741).

Baileya multiradiata, Gray. (*B. pluriradiata*, Gray.) In Coahuila (675, 676).

Artemisia Mexicana, Willd. At Soledad, Coahuila (736). A loosely paniculate form.

Haploesthes Greggii, Gray. In the mountains east of Saltillo (649).

Senecio salignus, DC. At Parras, Coahuila, and in Nuevo Leon (743, 744); the last a slender form, the same as 1367 Berlandier, on which is founded *S. axillaris*, Klatt, in Abhandl. Nat. Gesell. Halle, 15. 13.

Senecio lobatus, Pers. At Monclova (754). A slender depauperate form, the same as 1741 Berlandier, on which Klatt, l. c., founded his *S. imparipinnatus*.

Senecio Sanguisorba, DC. At Lerios, Coahuila (755).

Senecio Madrensis, Gray ; *new sp.* In the Sierra Madre, south of Saltillo (756).

Senecio Tolucanus, DC. In the same locality ; a single specimen of a broad-leaved form, answering to one collected by Schaffner and so named by Schultz Bip.

Cnicus altissimus, Pursh, var. filipendulus, Gray (?) At Parras (765).

Centaurea Americana, Nutt. At Saltillo (766).

Gochnatia hypoleuca, Gray. (*Moquinia hypoleuca*, DC.) At Laredo, on the Rio Grande (749), and at Parras, Coahuila (748).

Chaptalia nutans, Hemsl. In Mexico (764).

Perezia Wrightii, Gray. (*P. Coulteri*, Gray, in part.) At Parras (767), and in the mountains north of Monclova, Coahuila (768).

Perezia runcinata, Lag. At Uvalde, Texas (769).

Trixis angustifolia, DC. At Parras (745) and Soledad, Coahuila (2089); verging nearly to var. *latiuscula*, Gray.

Rhagadiolus hedypnoides, All. At Corpus Christi, Texas (2087). A waif.

Hieracium crepidispermum, Fries. In the Sierra Madre, south of Saltillo (758).

Hieracium Mexicanum, Less., var. niveopappum, Gray. In the same locality (757); 552 and 553 Parry & Palmer.

Taraxacum officinale, Vill. In the mountains east of Saltillo, at Monterey (761), and at San Luis Potosi (382 Schaffner).

Pyropappus multicaulis, DC. At Saltillo, Coahuila (759), and a stouter more robust form at Monterey (760).

Pinaropappus roseus, Less. In the mountains south of Saltillo, at Monterey (762), and at San Luis Potosi (390 Schaffner).

Lygodesmia grandiflora, Torr. & Gray. At Sutherland Springs, Texas (763).

Lobelia laxiflora, HBK., var. angustifolia, DC. In the mountains about San Luis Potosi (738 Schaffner), and at Guanajuato (Dugès); 560 Parry & Palmer.

Lobelia splendens, Humb. & Bonpl. At San Antonio (774) and Sutherland Springs, Texas (2090). — Var. fulgens. (*L. fulgens*, Humb. & Bonpl.) The pubescent form, rather rarer and more restricted in its range. At Monterey (773).

Lobelia fenestralis, Cav. In the San Miguelito Mountains, San Luis Potosi, with larger flowers than usual (764 Schaffner), and at Guanajuato (Dugès); 558 Parry & Palmer.

Lobelia gruina, Cav. Near Morales, San Luis Potosi (763 Schaffner); 559 Parry & Palmer.

Lobelia Cliffortiana, Linn., var. brachypoda, Gray. At Monterey (772); the same as 419 and 1429 Wright, referred to *L. Berlandieri*. Also a low slender form with white flowers, from the same region (771). This species appears to be always glabrous.

Lobelia Berlandieri, DC. At Monterey (770), at San Luis Potosi (119 Schaffner), and at Morales (737 Schaffner); 556 and 556½ Parry & Palmer. The same was collected also by Gregg at Monterey, and by Berlandier (3177) at Matamoros, and it is probably the same as Berlandier's 106 from Tampico, the original of the species. Puberulent and more or less hirsute toward the base with reflexed hairs, the stems low and lax, and the pedicels elongated.

Heterotoma lobelioides, Zucc. Mountains near Santa Maria del Rio, San Luis Potosi (736 Schaffner).

Campanula rotundifolia, Linn. At Lerios, in the high mountains east of Saltillo (776).

Arbutus Xalapensis, HBK. (?) In the Sierra Madre, south of Saltillo (777), and at Lerios (778); 314 of Schaffner's previous distribution. The very young leaves are densely pubescent, becoming nearly glabrous and beneath somewhat glaucous. The young ovary is usually pubescent. *A. Texana*, Buckley (referred to *A. Menziesii*), is the same. *A. prunifolia*, Klotsch, is doubtless the same species, and probably also *A. prunifolia*, Lindl. It agrees more nearly, perhaps, with the description of *A. mollis*, HBK., than with that of *A. Xalapensis*, and is apparently identical with the plant formerly cultivated as *A. mollis* and figured in Bot. Mag. t. 4595. 562 Parry & Palmer, and 98 Schaffner from the San Miguelito Mountains, are very similar to this, but the leaves are mostly quite glabrous, as also the ovaries. *A. Menziesii*, Pursh, with larger wholly glabrous and very rarely serrulate leaves, and with the ovary always glabrous, appears to be confined to California and Oregon.

Arbutus glandulosa, Mart. & Gal. In the San Rafael Mountains (99 Schaffner); 563 Parry & Palmer.

Arctostaphylos pungens, HBK. In the Sierra Madre, south of Saltillo (779), at Lerios (780), and at Guanajuato (Dugès), where it is known as "Pinguica" and employed as a diuretic; 565 Parry & Palmer.

PLUMBAGO SCANDENS, Linn. At Guajuco, Nuevo Leon (2106); 240½ Parry & Palmer.

PLUMBAGO PULCHELLA, Boiss. Near San Luis Potosi (727 Schaffner), and at Guanajuato (Dugès) where it is known as "Tiricua"; 240 Parry & Palmer, referred to the last species.

ANAGALLIS ARVENSIS, Linn. At Saltillo (782), and about San Luis Potosi (141 Schaffner).

CENTUNCULUS MINIMUS, Linn. Near Morales, San Luis Potosi (124 Schaffner); 569½ Parry & Palmer.

SAMOLUS EBRACTEATUS, HBK. At Sutherland Springs, Texas (781); a low form with very broadly spatulate leaves and small white flowers. Also at Parras (783), a variety with large purple flowers. 569 Parry & Palmer is a very peculiar variety, with acutely oblanceolate and very narrowly petiolate leaves, and long acuminate calyx-teeth.

BUMELIA SPINOSA, DC. At Uvalde, Texas (156), and at Saltillo, Coahuila (786). Agreeing satisfactorily with the figure of Moçino & Sesse, and differing from *B. lanuginosa* in its more spinose branches, smaller leaves, and in the mottled seed slightly more narrowed at base. It extends into Arizona, where it has been collected by Lemmon and Pringle (distributed as *B. pauciflora*, Engelm.). A more canescent form, from Parras (787), with shorter pedicels and less pubescent calyx, is probably the same.

DIOSPYROS TEXANA, Scheele. From Uvalde, Texas (789), and Guajuco, Nuevo Leon (784); also staminate specimens from near Laredo, Texas (788).

MENODORA HETEROPHYLLA, Moric. At San Antonio (790) and Sutherland Springs, Texas (791).

MENODORA COULTERI, Gray. Locality not given; 300½ Parry & Palmer. 571 Parry & Palmer, referred to this species, is a dwarf small-flowered form of *M. helianthemoides* (570 Parry & Palmer), or closely allied to it, and the same as 44 Gregg.

MENODORA LONGIFLORA, Gray. In the mountains north of Monclova (792); both the usual glabrous form and a pubescent variety, the *M. pubens*, Gray. The two forms were also distributed by Wright under the same number (1695). At Juraz, Coahuila, specimens were collected with unusually short corollas, not exceeding an inch in length (794).

MENODORA SCABRA, Gray. At Juraz, on the Sabinas River, Coahuila (793).

MENODORA SCOPARIA, Engelm. Probably the same locality (795).

Fraxinus cuspidata, Torr. In the mountains east of Saltillo (796).

Fraxinus pistaciæfolia, Torr. At Parras, Coahuila (797), with nearly the typical foliage though quite variable even in the same specimen. Other specimens from the same locality (798) have the leaves narrowly lanceolate, long-acuminate, attenuate at base, and coarsely serrate.

Fraxinus viridis, Michx., var. Berlandierana, Gray. At Monterey, Nuevo Leon; at San Luis Potosi (900 Schaffner); 572 Parry & Palmer.

Forestiera angustifolia, Torr. With leaves varying in form and size; at Uvalde (801), Eagle Pass (802), Corpus Christi Bay (803), and near Laredo, Texas (804), and at Monterey, Nuevo Leon (799, 800).

Thevetia Yccotli, DC., var. glabra, DC. At Guanajuato (Dugès); popularly known as "Frayle."

Apocynum cannabinum, Linn. In the Caracol Mountains, Coahuila (806); referred to *A. androsæmifolium*.

Echites (Euechites) Coulteri. Low (about a foot high), finely pubescent or becoming nearly glabrous: leaves oblong-lanceolate, narrow at base and rarely slightly cordate, acute, 1 to 1½ inches long, on very short petioles: inflorescence glabrous; peduncles shorter than the leaves, 2–7-flowered; bracts and calyx-lobes linear-subulate, acuminate, the latter nearly half the length of the corolla-tube and recurved; corolla 8 to 10 lines long, the lobes about equalling the cylindrical tube, which is pubescent within: anthers lanceolate, acuminate, cordate at base: follicles glabrous, 2 to 4 inches long, torulose, the seeds solitary or in pairs at the (2 to 4) nodes and comose at the summit. — In the Sierra Madre, south of Saltillo (805); 987 Coulter.

Plumiera ——? A fruiting specimen of what is cultivated at Monterey as the "Cow Tree." Follicles 6 to 9 inches long by an inch wide or more; leaves narrow.

Macrosiphonia Berlandieri, Gray. In the mountains on the west side of Saltillo (807), as well as at Monclova and in the mountains north of it. Flowers cream-white and fragrant; popularly known as "Flor de San Juan."

Macrosiphonia hypoleuca, Muell. At Guanajuato (Dugès), with the same popular name; 574 Parry & Palmer.

Philibertia cynanchoides, Benth. & Hook. At Laredo, on the Rio Grande (821).

PHILIBERTIA LINEARIS, Benth. & Hook., var. HETEROPHYLLA, Gray. At Parras, Coahuila (822).

PHILIBERTIA ELEGANS, Benth. & Hook. In the San Mignelito Mountains, San Luis Potosi (649 Schaffner), and at Guanajuato (Dugès); 589 Parry & Palmer.

ASCLEPIODORA DECUMBENS, Gray. At Sutherland Springs, Texas (817), and in the Sierra Madre, south of Saltillo (818). The Mexican specimen is referred by Fournier (Ann. Sci. Nat. 6. 14. 369) to *A. asperula*, Fourn. (*Acerates asperula*, Decaisne), which it may be, though it seems to differ in no respect from ordinary *A. decumbens*. *A. viridis* is not certainly known from Mexico, as Andrieux' and Bourgeau's specimens so named by Hemsley are referred by Fournier to *Asclepias auriculata*.

ASCLEPIODORA CIRCINALIS, Fournier, l. c. 369. (*Acerates circinalis*, Decaisne.) At Saltillo (815); in fruit only and in every way resembling *Asclepias brachystephana*, Engelm., but in the glabrous leaves and the umbels sessile in the upper axils. Fournier describes the follicles as 3 inches long, but in these specimens they do not exceed half of that, as in *A. brachystephana*.

ACERATES VIRIDIFLORA, Ell. Sparingly collected at Sutherland Springs, Texas, and in the Caracol Mountains, Coahuila.

ASCLEPIAS VERTICILLATA, Linn. At Parras, Coahuila (809, in part), and at San Luis Potosi (Schaffner): 584 Parry & Palmer. — Also var. SUBVERTICILLATA, Gray, at Guadalupe (810) and Sutherland Springs (2093), and at Parras with the typical form (809).

ASCLEPIAS LINARIA, Cav. At Lerios, Coahuila (811), and at Guanajuato (Dugès), where it is known as "Venenillo"; 585 Parry & Palmer.

ASCLEPIAS PERENNIS, Walter, var. PARVULA, Gray. At Sutherland Springs, Texas (2092), and in the Caracol Mountains, Coahuila (812). The Mexican specimens are referred by both Hemsley and Fournier to *A. nivea*, Linn., which has greener flowers, with longer hoods, and the horns not exserted.

ASCLEPIAS BRACHYSTEPHANA, Engelm. At Parras (813), and in the mountains east of Saltillo (814); 576 Parry & Palmer.

ASCLEPIAS GLAUCESCENS, HBK. (*A. elata*, Benth.) In the Sierra Madre, south of Saltillo (816); 579 Parry & Palmer.

ASCLEPIAS LONGICORNU, Benth. At Sutherland Springs, Texas (819, 2094); 587 Parry & Palmer.

ASCLEPIAS SETOSA, Benth. At Guanajuato (Dugès); popularly known as "Taraumara."

METASTELMA CALIFORNICUM, Benth. In the Caracol Mountains, Coahuila (828), and near San Luis Potosi (625 Schaffner, in part).

METASTELMA PALMERI. Twining, glabrous or with a pilose line upon the stem above: leaves linear-lanceolate, acuminate, cuneate or sometimes rounded at base, shortly petiolate, ½ to 1 inch long: corymbs nearly sessile, 3–10-flowered, glabrous; pedicels a line long or less: calyx-lobes acutish; corolla thick, white or brownish externally, over a line long, open-campanulate, the oblong lobes acutish, pubescent within: crown of five distinct thickish acuminate-subulate scales, exceeding the flat stigma: follicles 1½ inches long. — At Laredo on the Rio Grande (824), and about San Luis Potosi (625 Schaffner, in part); collected also at Chiapas (664 Ghiesbreght), and in the valley of Mexico (627 Bourgeau).

VINCETOXICUM MEXICANUM. Stems herbaceous, slender, twining, 2 or 3 feet long, with a hairy line on one side: leaves linear to linear-lanceolate, acuminate, cuneate or slightly rounded at base, ½ to 1½ inches long, glabrous or sparingly pubescent, or puberulent beneath: corymbs somewhat pubescent, sessile or nearly so, 1–10-flowered; pedicels a line long or less: calyx-lobes obtusish; corolla white, ⅔ of a line long, open-campanulate, the rather broad lobes obtusish, glabrous: crown of five thin ovate-oblong obtusish scales, distinct or nearly so, somewhat exceeding the flat stigma: follicles 2 to 2½ inches long. — In the Sierra Madre, south of Saltillo (823), and near San Luis Potosi (652 Schaffner, in part); 575 Parry & Palmer; Orizaba (342 and 984 Botteri). This may be the same as *Metastelma angustifolium*, Turcz.

ROULINIA UNIFARIA, Engelm. At San Antonio, Texas (827).

ROULINIA PALMERI. With the habit, foliage, pubescence and fruit of the last: peduncle shorter than the petiole, the corymbose raceme 3–6-flowered; pedicels unequal, 3 to 6 lines long: flowers larger, the linear calyx-lobes 1½ to 2 lines long; corolla 2 lines long, with a short tube, the greenish lobes whiter and somewhat thickened above: coronal scales united at base, quadrate, about equalling the stigma, obtusely 3-lobed at the summit, or the middle lobe longer and triangular-cuspidate. — In the mountains north of Monclova, Coahuila (829). Referred by Hemsley to the last, from which it differs chiefly in the characters of the flowers.

GONOLOBUS PARVIFLORUS, Gray. At Laredo on the Rio Grande (820).

GONOLOBUS RETICULATUS, Engelm. At San Antonio, Texas (825), and at Soledad, Coahuila (826).

GONOLOBUS PILOSUS, Benth. Near Morales, San Luis Potosi (650 Schaffner), and at Guanajuato (Dugès), where it is called "Flor del muerto negra"; 591 Parry & Palmer.

GONOLOBUS SCHAFFNERI, Gray. In the mountains near San Luis Potosi (651 Schaffner).

GONOLOBUS ERIANTHUS, Decaisne. At Guanajuato (Dugès); "Flor del muerto verde."

GONOLOBUS (?), sp. Somewhat woody, pubescent, the ovate acute leaves (1 or 2 inches long) cuneate to truncate at base or subcordate; in fruit only. In the mountains north of Monclova (830).

MITREOLA PETIOLATA, Torr. & Gray. At Sutherland Springs, Texas (1031).

POLYPREMUM PROCUMBENS, Linn. At Sutherland Springs, Texas (78), and near Morales, San Luis Potosi (117 Schaffner); 59 Parry & Palmer.

BUDDLEIA MARRUBIIFOLIA, Benth. At Parras (834), in the mountains west of Saltillo (1020) and north of Monclova (1019). "Flowers orange."

BUDDLEIA VERTICILLATA, HBK. (*B. sessiliflora*, HBK.) At Monterey, Nuevo Leon (835, 965), in the mountains near San Luis Potosi (632 Schaffner), and at Guanajuato (Dugès, who gives the popular name "Tepozan"); 594 Parry & Palmer. Described by Palmer as a large loosely branching bush, with greenish yellow flowers and a strong rather offensive odor. The larger leaves are frequently toothed.

BUDDLEIA SCORDIOIDES, HBK. In the high mountains at Lerios (836), at Parras (837), and in the mountains near San Luis Potosi (633 Schaffner, in part, under the name "Escobilla"); 592 and 595 Parry & Palmer. Also var. CAPITATA, with the whorls all contiguous and crowded at the ends of the branches; with the usual form (633 Schaffner, in part, as "Yerba de las escolas").

BUDDLEIA PERFOLIATA, HBK. In the mountains near San Luis Potosi (634 Schaffner); 593 and 596 Parry & Palmer.

BUDDLEIA HUMBOLDTIANA, Roem. & Schult. Variable and doubtless including several nominal species. At Saltillo (869), and at San Luis Potosi (635 Schaffner); 593½ and 725 Parry & Palmer. Schaffner's specimen, with very large leaves, accords with the description of *B. macrophylla*, Knuth. *B. Americana*, Linn. (594½ Parry & Palmer), may be distinguished by the leaves decurrent nearly to the base of the petiole, and by the longer and more simple branchlets of the panicle.

Erythræa calycosa, Buckl. At Parras, Coahuila (838). With rather small flowers; the same as collected by Gregg between Mapimi and Guajuguilla.

Erythræa ——? At Guanajuato (Dugès). With the compact cymes of *E. tricantha*, but with very much smaller seeds. Probably an undescribed species, but the specimens are incomplete.

Eustoma exaltatum, Griseb. At Laredo, on the Rio Grande (840), and at Parras, Coahuila (841).

Gentiana lanceolata, Griseb. At Guanajuato (Dugès).

Gentiana spathacea, HBK. At Guanajuato (Dugès), known as "Yelera"; 599 Parry & Palmer.

Halenia Rothrockii, Gray. In the Sierra Madre, south of Saltillo (839).

Phlox Drummondii, Hook. Near San Antonio, Texas (844).

Gilia rigidula, Benth. At Parras, Coahuila (843). Also a smaller-flowered form, glandular-pubescent, with the lobes of the leaves all very narrow; at Sutherland Springs, Texas (1185), and at Soledad (845); 605 Parry & Palmer, nearly the same. — Var. acerosa, Gray. At Saltillo (842).

Gilia incisa, Benth. At San Antonio, Texas (846), in the Caracol Mountains, Coahuila (2107), at Monterey (847) and at Guajuco, Nuevo Leon; 601 Parry & Palmer.

Gilia aggregata, Spreng. In the high mountains at Lerios.

Lœselia cærulea, Don. At Parras, Coahuila (2041), at Monterey, Nuevo Leon (848), and near San Luis Potosi (639 Schaffner); 603 Parry & Palmer.

Lœselia coccinea, DC. In the mountains near San Luis Potosi (638 Schaffner); 604 Parry & Palmer.

Lœselia glandulosa, Don. At Guanajuato (Dugès); the typical form.

Lœselia Greggii. Erect, branching below, pubescent: leaves opposite, the upper sometimes alternate, lanceolate, sessile or nearly so, ½ to 1 inch long, acute, serrate, the teeth awned: floral bracts broadly ovate or the inner lanceolate, mostly scarious, coarsely serrate and the teeth setosely tipped, not ciliate, nearly glabrous: calyx-lobes lanceolate, acuminate, lacerate; corolla 6 lines long, pink with white centre. — At Saltillo, Coahuila (1063), and also collected by Dr. Gregg (360). Allied to *L. ciliata*, Linn., which appears to include *L. involucrata*, Don (702 Parry & Palmer).

Phacelia congesta, Hook. At Monterey, Nuevo Leon (2028), and a very hispid form from Corpus Christi, Texas (849).

PHACELIA GLANDULOSA, Nutt., var. NEO-MEXICANA, Gray. In the mountains east of Saltillo (850).

PHACELIA INTEGRIFOLIA, Torr. At San Lorenzo de Laguna, Coahuila (851).

WIGANDIA KUNTHII, Choisy. At Guanajuato (Dugès). Known as "Ortiga grande."

NAMA * STENOCARPUM, Gray. In Coahuila, very common (853, 857). The anomalous cohesion of calyx-tube with ovary and capsule in this species (of which traces may be detected in some other species), which long escaped notice, I have referred to in the account of this genus contributed to the Botany of the Biologia Centrali-Americana, page 361. Our attention was first called to it by Dr. Vasey. The character "capsula inferne cum calyce longius adnata" in the work referred to, which belongs to this species, is accidentally appended to *N. stenophyllum*.

NAMA HISPIDUM, Gray. Different forms, from Sutherland Springs, Texas (2108), Monclova, Coahuila (860), and Monterey, Nuevo Leon (854).

NAMA DICHOTOMUM, Choisy, var. ANGUSTIFOLIUM, Gray. In the Sierra Madre, south of Saltillo (855), and in the San Rafael Mountains, San Luis Potosi (613 Schaffner). 610 Parry & Palmer is the typical form.

NAMA PALMERI, Gray in Hemsl. Bot. Biol. Centr.-Amer. 2. 361. At Soledad, Coahuila (856), and at San Luis Potosi, a more canescent form (77 Schaffner); 615½ Parry & Palmer.

NAMA UNDULATUM, HBK. At Monclova, Coahuila (858); 607 and 608 Parry & Palmer.

NAMA COULTERI, Gray. At San Lorenzo de Laguna, Coahuila (859). The sepals are scarcely dilated upward; but this appears to be the plant of Coulter, and also of Gregg. I had taken Palmer's plant for a form of the polymorphous *N. hispidum*.

NAMA STENOPHYLLUM, Gray, l. c. [Exclude the last phrase of the specific character, which was appended by mistake in transcribing. As the context shows (see line 5 of the same page), this belongs to *N. stenocarpum*.] At San Lorenzo de Laguna, Coahuila (862), clearly frutescent and evidently a denizen of saline soil. Dr. Havard has collected the same on the banks of Delaware Creek, near the Rio Grande, in Texas. Also a more hirsute and herbaceous form, from the same region (861).

* The determinations and notes under this genus are contributed by DR. GRAY.

Nama serpylloides, Gray, l. c., 363. At Monclova (982).

Nama rupicola, Pavon. At Soledad, Coahuila (2023); 612 Parry & Palmer, in part. — Var. rotundifolium, Gray, l. c., 363. At Monclova, Coahuila (983), and a very soft-villous rounder-leaved form from Monterey, Nuevo Leon (984).

Nama subpetiolare, Gray, l. c., 365. Near Monterey, Nuevo Leon (985).

Nama Jamaicense, Linn. At Monterey (986).

Nama origanifolium, HBK. The specimens which best accord with Kunth's figure are from San Luis Potosi (732 Schaffner). Some of 612 Parry & Palmer are the same, while others appear to belong to *N. rupicola*.

Nama Schaffneri, Gray, l. c., 361. Near Morales, San Luis Potosi (194 Schaffner); 609 Parry & Palmer.

Cordia Greggii, Torr. At San Lorenzo de Laguna, Coahuila (876).

Cordia Boissieri, DC. At Monterey, Nuevo Leon (877), where it is popularly known as "Nacaguista" and a decoction of the bark is much used for coughs and colds; 1126 Parry & Palmer.

Cordia podocephala, Torr. At Soledad, Coahuila (1024).

Ehretia elliptica, DC. (*E. ciliata* and *E. exasperata*, Miers.) At Corpus Christi, Texas (870), in fruit, and at Monterey, Nuevo Leon (871), in flower; 591½ Parry & Palmer. Growing to a height of 20 or 30 feet, and retaining its leaves and abundant fruit most of the year; the pale yellow sweetish berries edible; flowers cream-white, very fragrant. The Mexican specimens have been referred to *E. ciliata*, Miers, which was founded upon a Texan specimen (665 Lindheimer) and cannot be distinguished from *E. elliptica*.

Coldenia canescens, DC. At Parras (873) and Monclova, Coahuila (874, in part), at Monterey, Nuevo Leon (1018), and in the San Miguelito Mountains, San Luis Potosi (631 Schaffner); 615 Parry & Palmer. Flowers described as light blue, becoming pink.

Coldenia hispidissima, Gray. At Monclova, Coahuila (898). "Flowers rose-color."

Coldenia (Eddya) Mexicana. Perennial, woody at base, prostrate, more or less setosely hispid and tomentose: leaves ovate to broadly lanceolate, more or less abruptly attenuate into a slender petiole, veinless: flowers sessile, clustered; sepals narrowly linear; corolla 3 lines long, rose-color: nutlets (only two usually maturing) less finely and closely granulated than in the last, scarcely ½ line long. — In the mountains east of Saltillo (872), and at Monclova, Coahuila

(874, in part); 616½ Parry & Palmer. Much resembling *C. canescens*, but with more ovate leaves, and with the fruit and the more unequally inserted stamens of the section *Eddya*. The embryo is straight and the cotyledons entire.

Coldenia tomentosa. Resembling the last, but of closer habit and more densely leafy, the thicker ovate-lanceolate leaves densely tomentose beneath, as well as setosely hispid, more strongly revolute and mostly with shorter petioles: flowers somewhat larger, "purple" or "magenta," with longer filaments and larger anthers: nutlets decidedly larger (⅔ of a line long) and more coarsely granulated. — In the Sierra Madre, south of Saltillo (864).

Coldenia Greggii, Gray. At San Lorenzo de Laguna, Coahuila (865). "Flowers rose-color."

Tournefortia capitata, Mart. & Gal. At Guanajuato (Dugès); 613 Parry & Palmer.

Tournefortia Monclovana. Perennial, stout, herbaceous, a foot high, tomentosely pubescent throughout: leaves ovate to oblong-lanceolate, acute, abruptly cuneate at base, 2 to 4 inches long, on stout petioles: spikes in pairs or threes, on peduncles nearly equalling the leaves, ebracteolate: calyx-lobes narrowly linear, 1½ lines long; corolla glabrous, 3 or 4 lines long, the limb as long as the tube, and throat naked: anthers sessile on the middle of the tube, acute: stigma conical, sessile: fruit subglobose, pubescent, 1½ lines in diameter. — In the mountains northeast of Monclova, Coahuila (887). Resembling *T. hirsutissima*, but with more simple inflorescence, glabrous corolla, etc.

Heliotropium angustifolium, Torr. In the Caracol Mountains (879), at Soledad (880), and Juraz, in Coahuila (881), and at Monterey, Nuevo Leon (405, 878). Flowers cream-color.

Heliotropium confertifolium, Torr. At Laredo, on the Rio Grande (875), the typical form; 616 Parry & Palmer. This is probably the same as *H. rupestre*, Mart. & Gal., which is an older name. Also a less silky variety, more diffuse and with the leaves less crowded, from Monclova (863) and Soledad, Coahuila (890). This is the *H. limbatum* of the Botany of the Mexican Boundary, scarcely differing from *H. limbatum*, Benth., but in the more leafy and scarcely at all scorpioid inflorescence. Flowers white.

Heliotropium inundatum, Swartz. At San Lorenzo de Laguna, Coahuila (882), and a low decumbent form in the San Miguelito Mountains of San Luis Potosi (726 Schaffner); 619 Parry & Palmer. Also a variety, more canescent and with larger and more hispid fruit

in closer spikes, from Monterey (885). 522 Coulter and specimens collected by Palmer in 1869 on the Yaqui River, Arizona, are nearly the same. Flowers yellow or yellowish.

Heliotropium glabriusculum, Torr. At Laredo on the Rio Grande (884), and in the mountains west of Saltillo, Coahuila (883). Flowers cream-white.

Heliotropium parviflorum, Linn. At Laredo on the Rio Grande (886) and in the region west of San Antonio, Texas, and at Monclova, Coahuila (1021); 617 Parry & Palmer.

Heliotropium Greggii, Torr. At San Lorenzo de Laguna, Coahuila (888).

Heliotropium convolvulaceum, Gray. In the region west of San Antonio, Texas (889).

Heliotropium (Euheliotropium) Palmeri, Gray in herb. Perennial, herbaceous, branching from the base, the slender stems ascending, strigose-pubescent throughout, a span high: leaves linear, or linear-oblanceolate on the main stem, nearly sessile, acute or obtusish, 6 to 10 lines long, the margin somewhat revolute: spikes mostly lateral and simple, ebracteolate, becoming one or two inches long in fruit, rather few-flowered: calyx-lobes linear, a line long or less; corolla white, 3 lines long, with a broad spreading limb: nutlets subglobose, pubescent. — At Soledad, Coahuila (891, 892); very common.

Heliotropium Curassavicum, Linn. About San Luis Potosi (724 Schaffner).

Omphalodes aliena, Gray; Hemsley, Bot. Biol. Centr.-Amer. 2. 377. At Monterey, Nuevo Leon (893).

Omphalodes cardiophylla, Gray; Hemsley, l. c. At Saltillo, Coahuila (894). The relations of these species are hardly clear. They seem to belong to *Paracaryum* rather than to *Omphalodes*, if these genera are to be retained as characterized by Bentham & Hooker, the nutlets being attached nearly their whole length, from just above the base to the apex, to the erect-pyramidal gynobase. The thin-membranous character of the flattened nutlets, as well as the habit, separates them from *Echinospermum*.

Eritrichium fulvocanescens, Gray. In the Sierra Madre, south of Saltillo (895).

Eritrichium hispidum, Buckl. At Lerios in the high mountains east of Saltillo (896, 2046), and in the San Rafael Mountains, San Luis Potosi (731 Schaffner); 623 Parry & Palmer.

Antiphytum floribundum, Gray. In the San Miguelito Mountains, San Luis Potosi (730 Schaffner).

Antiphytum Parryi. Perennial (?), low (2 to 4 inches high), branching from the base, stems ascending, canescent with a somewhat silky and substrigose pubescence: leaves linear-oblanceolate, 2 to 4 lines long: flowers nearly sessile, axillary: calyx-lobes linear, 2 lines long: nutlets granulate, the sessile triangular-ovate scar with a narrow slightly raised margin and minute central perforation. — 618 Parry & Palmer (with some *Heliotropium confertifolium*), collected by Dr. Parry, in August, 1878, between San Luis Potosi and San Antonio.

Lithospermum spathulatum, Mart. & Gal. In the Sierra Madre, south of Saltillo (899); a low hispid form.

Lithospermum Matamorense, DC. At Guajuco (901) and Monterey, Nuevo Leon (902). Referred by Hemsley to *Eritrichium*.

Lithospermum angustifolium, Michx. At Lerios, in the mountains east of Saltillo (900), the small-flowered form, and with nutlets not punctate. Also a variety with laxer habit, broader leaves, and larger flowers; in the Caracol Mountains (897), and at Soledad, Coahuila.

Lithospermum strictum, Lehm. Near San Miguelito, San Luis Potosi (728 Schaffner); 620 and 622 Parry & Palmer.

Lithospermum distichum, Ort. In the San Miguelito Mountains (729 Schaffner); 621 Parry & Palmer.

Lithospermum Palmeri. Perennial, herbaceous, tall and erect (2 feet high), pubescent with mostly very short strigose hairs: leaves sessile, ovate-oblong, acute or short-acuminate, 1 to 2 inches long: flowers axillary, on pedicels 3 to 6 lines long: calyx villous below, the linear acuminate lobes 6 to 8 lines long; corolla cream-yellow, nearly an inch long, tomentose, cylindrical, contracted at the naked throat, with small rounded spreading lobes: style as long as the corolla: nutlets not punctate, nor much contracted above the base. — In the Sierra Madre, south of Saltillo, Coahuila (903). With the habit of an *Onosmodium*.

Ipomœa cardiophylla, Gray. At Soledad, Coahuila (904). The peduncles mostly several-flowered, longer than the petioles.

Ipomœa Mexicana, Gray. At Soledad (905).

Ipomœa Lindheimeri, Gray. At Soledad (906).

Ipomœa commutata, Roem. & Schult. At Soledad (907).

Ipomœa sinuata, Ort. At Uvalde, Texas (908).

Ipomœa trifida, Don, var. Torreyana, Gray. At Bluffton, Texas (909).

Ipomœa muricata, Cav. In the Sierra Madre, south of Saltillo (910).

Ipomœa costellata, Torr. In the mountains northeast of Monclova, Coahuila (2095).

Ipomœa stans, Cav. At San Lorenzo de Laguna, Coahuila, at San Luis Potosi (1050 Schaffner), and at Guanajuato (Dugès); 627 Parry & Palmer. Dugès gives the popular name "Espantolobos."

Ipomœa heterophylla, Ort. (?) Near Morales, San Luis Potosi (619 Schaffner). Resembling *I. Lindheimeri*, but with smaller flowers; the same as 389 Gregg.

Ipomœa coccinea, Linn., var. hederifolia, Gray. At San Luis Potosi (622 Schaffner); 625 Parry & Palmer.

Ipomœa versicolor, Meissn. At San Luis Potosi (111 Schaffner), and Guanajuato (Dugès), where it is known as "Palmira."

Ipomœa Llaveana, Meissn. At Guanajuato (Dugès); "Trompetilla."

Ipomœa Schaffneri. Annual, twining, 3 to 5 feet high, sparingly pubescent with short strigose hairs: leaves thick, round-cordate, with rounded or slightly angled approximate basal auricles, acute, coarsely sinuate-toothed, 1 or 2 inches in diameter, exceeding the petioles: pedicels shorter than the leaves, 1-flowered: calyx-lobes hispid, oblong-ovate, acute, 4 lines long; corolla 2 inches long, rose-color and white, funnelform with a rather broad tube, the stamens and style two-thirds as long: capsule depressed-globose to ovate, 4 lines long, 3-celled. — In sandy places about San Luis Potosi (621 Schaffner); peculiar in its round-cordate sinuately toothed leaves.

Ipomœa ——? In sandy places about San Luis Potosi (620 Schaffner); not identified. A slender twining annual, 2 feet high, glabrous or slightly puberulent: leaves 9 to 18 lines long, broad-cordate to narrowly lanceolate, acuminate, often obscurely sinuate, the short basal lobes rounded or angled; peduncles about equalling the petioles and shorter than the leaves, 1–2-flowered: sepals lanceolate becoming oblong-ovate and obtuse or acute, 2 lines long; corolla 9 lines long, narrowly funnelform, purple above: capsule broadly ovate, 3 lines long, 2-celled.

Convolvulus incanus, Vahl. At Monterey, Nuevo Leon (911), and about San Luis Potosi (618 Schaffner); 629 Parry & Palmer.

Evolvulus discolor, Benth. At Lerios in the high mountains east of Saltillo, Coahuila (912). Scarcely more than a very villous form of the next.

Evolvulus sericeus, Swartz. At Sutherland Springs, Texas (913, 914), and near San Luis Potosi (615^{b} Schaffner); 628½ Parry & Palmer.

Evolvulus alsinoides, Linn. At Monclova, Coahuila (915), at Monterey, Nuevo Leon (2096), at San Luis Potosi (615 Schaffner), and at Guanajuato (Dugès); 628 Parry & Palmer.

Dichondra repens, Forst. At Guanajuato (Dugès).

Dichondra argentea, Humb. & Bonpl. About San Luis Potosi (617 Schaffner), and at Guanajuato (Dugès); 624 Parry & Palmer. The popular name is "Oreja de raton."

Cressa Cretica, Linn. At San Lorenzo de Laguna, Coahuila.

Cuscuta umbellata, HBK. At Laredo on the Rio Grande (916).

Cuscuta squamata, Engelm. At San Lorenzo de Laguna, Coahuila (917, 2098).

Cuscuta arvensis, Beyr. At Parras, Coahuila (919). Also var. verrucosa, Engelm., at San Luis Potosi (780 Schaffner).

Cuscuta Potosina, Schaffner Ms. Stems capillary: the flowers minute (scarcely a line long), short-pedicelled in small rather loose clusters: calyx-lobes triangular, acute, scarcely equalling the deeply campanulate corolla-tube, which is rather longer than its erect ovate acute somewhat inflexed and at last connivent lobes: stamens short, the subglobose anthers nearly as long as the filaments; scales broad, deeply fringed, slightly exceeding the tube: capillary styles nearly as long as the depressed ovary: capsule covered by the marcescent corolla, extremely thin, easily tearing off from its base but not circumscissile, 1-seeded. — One of the smallest-flowered species, closely allied to *C. arvensis*, from which the very fragile 1-seeded capsule, covered by the hood-like corolla, principally distinguishes it. (*Dr. G. Engelmann.*) — Near San Luis Potosi (779 Schaffner); growing on some labiate, probably a *Scutellaria*.*

Cuscuta decora, Chois. At Bluffton, Texas (2097).

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* Dr. Engelmann furnishes the following description of another new species, which was distributed in the previous Parry & Palmer collection: —

C. mitraeformis, Engelm. Stems thick. flowers short-pedicelled, crowded in large glomerules. calyx-lobes orbicular, unequal, the outer carinate, fully as long as the short-campanulate corolla-tube, lobes of the corolla as long as the tube, broadly oval, rounded, at last spreading or reflexed subulate filaments as long as the linear-oblong anthers; scales very broad, deeply fringed, exsert, incurved ovary with very short subulate styles: capsule large, exsert, 2-horned with the broad spreading conical styles, regularly circumscissile. — Between San Luis Potosi and Tampico, in May; Dr. E. Palmer. Flowers 3 lines and capsule 4 lines long; clusters in fruit 10 to 12 lines thick. Nearly allied to *C. Xalapensis*, but distinguished by its much larger flowers and fruit, and by its short thick almost conical styles.

Cuscuta tinctoria, Mart. In the Caracol Mountains, Coahuila, on *Serjania* (918), and in the mountains near San Luis Potosi, on *Schinus Molle* (781 Schaffner); 631 Parry & Palmer (referred to *C. Xalapensis*), also on *Schinus*. The popular name, according to Dr. Schaffner, is "Zacatlas-culi," — evidently the "Zaca-tlascalli" of Karwinski.

Cuscuta odontolepis, Engelm. At Guanajuato (Dugès). Dr. Engelmann recognizes this as referable to *C. odontolepis*, though with wider and shorter calyx than in the original specimens, the lobes acuminate and often reflexed, the scales much larger, ovate and deeply fimbriate, and the style shorter.

Solanum triquetrum, Cav. At San Antonio, Texas (929), and at Saltillo (930); 633½ Parry & Palmer.

Solanum Torreyi, Gray. At San Antonio (2102), Uvalde (932), and Bluffton, Texas (933).

Solanum nigrum, Linn. In various forms, at Lerios and in the Caracol Mountains, Coahuila, at Monterey, Nuevo Leon (934), and at Guanajuato (Dugès); 634 Parry & Palmer. Also with somewhat angled and spinulose branches, the *S. pterocaulon* of Dunal, in sandy places near San Luis Potosi (692 Schaffner), and the var. villosum, Mill., in the mountains about San Luis Potosi (691 Schaffner).

Solanum elæagnifolium, Cav. At Laredo, on the Rio Grande (2101), at San Lorenzo de Laguna, Coahuila (935, 936), and at San Luis Potosi (695 Schaffner); 636 Parry & Palmer.

Solanum tuberosum, Linn. In the Sierra Madre, south of Saltillo (937, 938), and in the mountains near San Luis Potosi (693, 694 Schaffner); 632, 633 Parry & Palmer. Schaffner gives the popular name "Peyrilla del monte."

Solanum heterodoxum, Dun. In the mountains northeast of Monclova (939), and at Parras, Coahuila (940). Also with smaller flowers and light-colored seeds, at San Luis Potosi (696 Schaffner); 634½ Parry & Palmer. The seeds ordinarily are nearly black.

Solanum rostratum, Dun. At San Antonio, Texas (941), at Saltillo (942), and at Guanajuato (Dugès). A form with somewhat less pubescence occurs near San Luis Potosi (697 Schaffner); 635 Parry & Palmer, referred to *S. cornutum*, Lam., of which there are no specimens in Herb. Gray, — unless, as is probable, *S. rostratum* itself is to be considered only as the more pubescent form of it. Known, according to Dugès, as "Mala muger."

Solanum Cervantesii, Lag. At San Luis Potosi (690 Schaffner); 638 Parry & Palmer.

Solanum torvum, Swartz. At Guanajuato (Dugès); 639½ Parry & Palmer. 637 Parry & Palmer is also referred to this species.

Physalis lobata, Torr. At Uvalde, Texas (944), and in the mountains west of Saltillo (943).

Physalis viscosa, Linn., var. spathulæfolia, Gray. At Lamar on Copano Bay, Texas, near salt water (945). Fruit greenish yellow, with a very strong overripe-apple odor.

Physalis æquata, Jacq. f. At San Lorenzo de Laguna, Coahuila (946); 640 Parry & Palmer.

Physalis angulata, Linn. At Sutherland Springs, Texas (947).

Physalis mollis, Nutt. On Corpus Christi Bay, Texas (2103). — Var. cinerascens, Gray, at Parras, Coahuila (949), at Monterey, Nuevo Leon (948), at San Luis Potosi (700 Schaffner), and at Guanajuato (Dugès), where it is known as "Taltomate"; 641 and 648 Parry & Palmer. 112 Bourgeau, referred to *P. chenopodiifolia*, Lam., is *P. mollis*.

Physalis pubescens, Linn. In the mountains northeast of Monclova (2104), and near Morales, San Luis Potosi (701 Schaffner, in part); 645 Parry & Palmer.

Physalis Philadelphica, Lam. Near Morales, San Luis Potosi (701 Schaffner, in part). 871 Bourgeau is the same.

Physalis Fendleri, Gray. In the mountains near San Luis Potosi (698 Schaffner); 642 Parry & Palmer.

Physalis ——? A low branching perennial, glandular-pubescent, with slender somewhat flexuous stems and small ovate to ovate-oblong entire or sinuate-toothed leaves (3 to 12 lines long), and yellow flowers (9 lines broad) on pedicels shorter than the fruiting calyx. — In the San Miguelito Mountains, San Luis Potosi (699 Schaffner).

Chamæsaracha Coronopus, Gray. Various forms of this very variable species, including in it *C. sordida*, Gray. With lanceolate coarsely toothed leaves, large flowers, and long solitary pedicels — with mostly short pubescence, at San Antonio, at Sutherland Springs, and at Laredo, Texas (920), and in the mountains west of Saltillo (926) — and more villous, at Monterey, Nuevo Leon (921, 922); very floccose-villous, with similar leaves, but small flowers and fascicled pedicels, in the mountains northeast of Monclova (924); a common form, pubescent or sparingly floccose-villous, with narrow pinnatifid leaves and small flowers, at Parras (2099), at San Lorenzo de Laguna (927,

928, and 2100 with "pure white" flowers), and at San Luis Potosi (703 Schaffner); with ovate leaves, abruptly cuneate at base and crenately toothed, and fruit large, at Parras (923), and with similar but smaller and sinuately-toothed leaves, and with smaller flowers and fruit, at San Lorenzo de Laguna (925); 653 Parry & Palmer. In the multiplicity of forms it seems impossible to distinguish two species, unless it be arbitrarily upon some single character.

Saracha umbellata, Don. (*S. glabrata*, Miers.) Near San Luis Potosi (702 Schaffner); 651 Parry & Palmer; also 347 Bourgeau, referred to *S. Jaltomata*. Roth originally described the species (in 1800) from cultivated plants, without giving their source, but Jacquin in 1804 refers the species positively to Mexico.

Capsicum baccatum, Linn. At Uvalde (931), and at Sutherland Springs, Texas; 1135 Parry & Palmer.

Cacabus Mexicanus. Viscidly pubescent throughout, rather stout: leaves broadly ovate and mostly cordate, or the upper ovate-oblong, coarsely sinuate-toothed or nearly entire, obtuse or acute, 2 inches long and exceeding the petioles, the upper and secondary ones smaller: flowers solitary; calyx broadly tubular-campanulate, 6 (becoming 15) lines long, with acuminate teeth; corolla purplish, 15 lines long, broadly funnelform, nearly glabrous without, densely tomentose toward the base within, the limb nearly entire: berry subglobose, 6 lines in diameter, loosely enclosed in the inflated 10-carinate calyx. — In the San Miguelito Mountains, San Luis Potosi (704 Schaffner). Near *C. prostratus*, Bernh.

Nectouxia formosa, HBK. At Lerios, Coahuila (958); 652 Parry & Palmer.

Lycium brachyanthum, Gray in Hemsl. Bot. Biol. Centr.-Amer. 2. 426. At Laredo, on the Rio Grande (963), in the mountains west of Saltillo (866), and at Soledad, Coahuila (867, 868); 723 Parry & Palmer. A small loosely branched bush, the angular branches pubescent or glabrate, with obovate to oblanceolate or spatulate short-pubescent fascicled leaves (2 to 8 lines long by 1 or 2 wide), and nearly sessile flowers: calyx pubescent, with very short and broad lobes, equalling the broad tube of the cream-white corolla, which is densely woolly within and about 2 lines long: mature fruit 3 lines in diameter.

Lycium Berlandieri, Dun. At Guadalupe, Texas (950), and westward to Laredo (951, 952), at Saltillo (957) and in the mountains west of that place (954, 956), and at San Luis Potosi (1059 Schaffner); 654, 654½, and 656½ Parry & Palmer. Apparently all

forms of the same species, though the Mexican specimens have mostly shorter pedicels, the fruit is sometimes smaller, and the corolla varies to some extent.

Lycium Carolinianum, Walt. On Corpus Christi Bay, Texas (953), trailing on the ground and rooting at the joints.

Lycium barbinodum, Miers, var. (?) In the mountains west of Saltillo (955). With shorter and more spreading corolla than in the forms of *L. Berlandieri*, but with smaller leaves and much shorter pedicels than in typical *L. barbinodum*. Flowers described as lavender-color or violet.

Lycium Schaffneri, Gray. At San Luis Potosi (Schaffner); 655 Parry & Palmer.

Datura quercifolia, HBK. At Parras, Coahuila (959), and at San Luis Potosi (705, 706 Schaffner); 658 Parry & Palmer.

Datura meteloides, DC. At San Lorenzo de Laguna, Coahuila (960), in the San Miguelito Mountains, San Luis Potosi (707 Schaffner), and at Guanajuato (Dugès), where it is known as "Toloachi."

Hyoscyamus albus, Linn. At San Lorenzo de Laguna, in cultivation (964), and naturalized about San Luis Potosi (708 Schaffner), where it was introduced by the French.

Cestrum multinervium, Dun. At San Antonio, Texas (808).

Cestrum laxum, Benth. At Guanajuato (Dugès); popularly known as "Huele de noche de la Sierra."

Cestrum lanatum, Mart. & Gal. At Guanajuato (Dugès); "Ahuacatillo."

Nicotiana nudicaulis. Viscid-pubescent, 1 to 2 feet high, the stem and naked branches bearing short paniculate or simple racemes: leaves mostly at the base, entire, oblanceolate with a winged petiole, not auriculate nor clasping, 2 to 18 inches long by 1 to 4 wide, the cauline 1 to 3 inches long: pedicels 2 or 3 lines long: calyx 3 lines long, the longer narrow tooth about equalling the tube; corolla 9 lines long, narrowly cylindrical, with the throat contracted, very narrow at base within the calyx, the very short obtusely lobed limb nearly erect: filaments inserted equally near the base: capsule ovate, acute, 4 lines long. — At Monterey, Nuevo Leon (961). Allied to *N. paniculata*.

Nicotiana trigonophylla, Dun. In the mountains east of Saltillo (962), and in rocky places about San Luis Potosi (688 Schaffner); 660 Parry & Palmer.

Nicotiana repanda, Willd. At Georgetown, Williamson County, Texas (999); 659 Parry & Palmer.

NICOTIANA GLAUCA, Linn. At San Luis Potosi (689 Schaffner), and at Guanajuato (Dugès), where it is called "Tronadora de España."

PETUNIA PARVIFLORA, Juss. At San Luis Potosi (612 Schaffner); 661 Parry & Palmer.

BOUCHETIA ERECTA, DC. At Lerios (852) and Soledad, Coahuila (2021), and at San Luis Potosi (611 Schaffner); 630 Parry & Palmer, in part. The linear portion of the corolla-tube is slightly longer than the tube of the calyx (longer than in any Texan specimens), but by no means so elongated as shown in the original figure of *D. procumbens*, to which species Schaffner's plants are in part referred by Hemsley, and the corolla is more expanded above.

NIEREMBERGIA ANGUSTIFOLIA, HBK. At San Luis Potosi (610 Schaffner); 630 Parry & Palmer, in part.

LEUCOPHYLLUM TEXANUM, Benth. At Uvalde, Texas, and Laredo on the Rio Grande, and in the intervening region (967, 968, 2011), and at Parras, Coahuila; the latter a form with broad spatulate leaves, referred to *L. minus*, Gray, and the same as 663 Parry & Palmer.

VERBASCUM VIRGATUM, With. In the mountains near Morales, San Luis Potosi (742 Schaffner).

ANTIRRHINUM MAURANDIOIDES, Gray. At San Antonio, Texas (971), at Saltillo (970), and at San Luis Potosi (749 Schaffner); 665 Parry & Palmer.

MAURANDIA BARCLAYANA, Lindl. In the Caracol Mountains, east of Monclova (972), in the San Miguelito Mountains, San Luis Potosi (748 Schaffner), and at Guanajuato (Dugès); 664 Parry & Palmer.

MAURANDIA ERECTA, Hemsl. in Gard. Chron. 2. 17. 22, and Bot. Biol. Centr.-Amer. 2. 441. At San Lorenzo de Laguna, Coahuila (966).

PENTSTEMON BARBATUS, Nutt. In the Sierra Madre, south of Saltillo (975), and in the Caracol Mountains, east of Monclova (973); 667 Parry & Palmer.

PENTSTEMON IMBERBIS, Trautv. At Saltillo, and in the mountains east of that place (974), and in the San Miguelito Mountains, San Luis Potosi (752 Schaffner); 667½, 668 Parry & Palmer.

PENTSTEMON CAMPANULATUS, Willd. At Lerios in the high mountains east of Saltillo (976), and at Guanajuato (Dugès); 669 Parry & Palmer.

PENTSTEMON BACCHARIFOLIUS, Hook., var. SCHAFFNERI, Hemsl. In the San Miguelito Mountains, San Luis Potosi (751 Schaffner); 666 Parry & Palmer.

Pentstemon tenuifolius, Benth. In the Morales Mountains, San Luis Potosi (753 Schaffner); 672 Parry & Palmer.

Pentstemon stenophyllus, Gray. In mountains near San Luis Potosi (754 Schaffner); 671 Parry & Palmer.

Mimulus glabratus, HBK. At Saltillo (977), and at San Lorenzo de Laguna, Coahuila (978, 979); 675 Parry & Palmer.

Stemodia durantifolia, Swartz. Near Morales, San Luis Potosi (714 Schaffner); 679 Parry & Palmer. Also a prostrate and rooting variety (?), with sessile flowers, and a broad funnelform corolla 6 lines long; between the Frio and Nueces Rivers, Texas (1053).

Conobea multifida, Benth. At Sutherland Springs (980).

Herpestis rotundifolia, Pursh. At Guadalupe, Texas (981). Flowers white.

Herpestis Monniera, HBK. At San Antonio, Texas (987); 677 Parry & Palmer.

Herpestis chamaedrioides, HBK. At Guajuco (988), and at Monterey, Nuevo Leon, and near Morales, San Luis Potosi (743 Schaffner); 674 Parry & Palmer. Mostly with large yellow flowers, often twice the length of the calyx, the outer segments of which are oblong-ovate or lanceolate. 988 Palmer has been referred to *H. nigrescens*, and 674 Parry & Palmer in part to *H. radicata*, Benth. The species is a variable one, and easily includes these forms.

Ilysanthes gratioloides, Raf. Near Morales, San Luis Potosi (121 Schaffner); 676 Parry & Palmer.

Limosella aquatica, Linn. Near Morales (125 Schaffner).

Veronica peregrina, Linn. At Monterey, Nuevo Leon, and near Morales (723 Schaffner); 678 Parry & Palmer.

Buchnera lithospermifolia, HBK. (?) Near San Luis Potosi (Schaffner, without number). Apparently a common though somewhat variable species in Mexico, and extending into Arizona (2830 Lemmon), with leafy stem 1 to 2 feet high, short rough pubescence, ovate to linear-lanceolate bracts, narrow calyx-teeth exceeding the ovate-oblong acute capsule (3 lines long), and corolla 5 or 6 lines long. Bentham identifies the Mexican plant (as represented by 100 Hartweg) with this Colombian species, though it does not wholly agree with the description. It is all referred by Hemsley to *B. elongata*, Swartz, but that species as represented in the United States and West Indies is very clearly distinguished by its more naked stems, short ovate bracts, short calyx-teeth, and obtuse capsule exceeding the calyx. It is doubtful whether *B. elongata* occurs at all in Mexico.

Buchnera pilosa, Benth. (?) Near San Luis Potosi (Schaffner, with the last, without number). Lower and more slender than the last (4 to 7 inches high), pilose throughout, and with shorter calyx and corolla, the capsule 2 lines long. This may not be the plant to which the name was originally applied, and which was later referred by Bentham to *B. lithospermifolia*, but the pilose pubescence is characteristic.

Seymeria bipinnatisecta, Seem. Caracol Mountains (989).

Seymeria virgata, Benth. In the San Miguelito Mountains, San Luis Potosi (735 Schaffner); 682 Parry & Palmer.

Gerardia (Dasystoma) Greggii. Pubescent with very short stiff spreading glandular hairs: leaves small (an inch long or less), sessile, ovate, coarsely and acutely toothed, somewhat hastately lobed at base: pedicels exceeding the leaves, curved, ascending: calyx-lobes lanceolate, acuminate, equalling or exceeding the tube; corolla pubescent, "dark buff," an inch long. — In the Sierra Madre, south of Saltillo (2024), very scanty specimens; collected also by Dr. Gregg (81). Allied to *G. pedicularia;* referred to *G. grandiflora* by Hemsley.

Gerardia peduncularis, Benth. At San Luis Potosi (755 Schaffner); 670 Parry & Palmer.

Castilleia lanata, Gray. At Saltillo, Coahuila (990); 689 Parry & Palmer.

Castilleia tenuiflora, Benth. In the mountains east of Saltillo (991), and in the San Miguelito Mountains, San Luis Potosi (740 Schaffner); 692 Parry & Palmer.

Conopholis Mexicana, Gray in herb. Distinguished from *C. Americana* by its longer and more rigid lanceolate acuminate scales, the calyx less deeply toothed, and the corolla larger (8 lines long). — In the Sierra Madre, south of Saltillo (996), and at Soledad, Coahuila, growing at the foot of oaks; 693 Parry & Palmer. It has been previously collected in New Mexico in the Organ Mountains (1461 Wright), and in the Santa Magdalena Mountains (G. R. Vasey), and in the mountains of Arizona (Rusby), and it is probably the more common species in Mexico. The plant figured by Endlicher (Iconogr. t. 81) for *C. Americana* is *C. Mexicana*, probably from Andrieux's collection.

Castilleia sessiliflora, Pursh. In the mountains east of Saltillo (993), and in the Sierra Madre, south of that place (992).

Castilleia scorzoneræfolia, HBK. At Lerios in the high mountains east of Saltillo (2026), a tall and nearly the typical form, and the same as 107 Gregg; 690 Parry & Palmer is probably the

same. Also a low annual variety, in the San Miguelito Mountains (741 Schaffner), and at Guanajuato (Dugès); 691 Parry & Palmer. Dugès gives the popular name "Flor de Milpa."

Castilleia canescens, Benth. In the mountains near San Luis Potosi (739 Schaffner), and at Guanajuato (Dugès); 688 Parry & Palmer. Approaching *C. tenuiflora*.

Orthocarpus Mexicanus, Hemsl. Bot. Biol. Centr.-Amer. 2. 463, t. 63, A., fig. 1–6. At Lerios, Coahuila, — a single specimen.

Lamoreuxia rhinanthifolia, HBK. In the San Miguelito Mountains, San Luis Potosi (750 Schaffner), and at Guanajuato (Dugès); 686 Parry & Palmer. 101 Bourgeau, referred to *L. Gutierrezii*, is the same.

Pedicularis Canadensis, Linn. In the Sierra Madre, south of Saltillo (994); 684 Parry & Palmer.

Aphyllon multiflorum, Gray. At Saltillo (995).

Aphyllon Ludovicianum, Gray. At Uvalde, Texas (2025).

Aphyllon (Notiaphyllon) Dugesii. Glabrous or very sparingly puberulent, about 3 inches high, with short scaly-bracteate stems and dense simple spikes: flowers sessile or the lower shortly pedicellate, with a pair of linear acuminate bractlets: calyx equally 5-cleft to below the middle, 5 lines long; corolla (8 lines long) bilabiate with erect lips, the upper bifid, the lower 3-parted, plicate and truncate between the segments: stigma bilamellar, the lobes lateral. — At Guanajuato (Dugès).

Utricularia denticulata, Benj. (?) Growing in mud, the spatulate leaves nearly an inch long, with occasional utricles attached to the petioles. The flowers nearly accord with Benjamin's description, but the denticulations at the apex of the broad lower lip (4 lines long) are obscure, and the palate is margined by a row of prominent tubercles. — Near Morales, San Luis Potosi (120 Schaffner); 694½ Parry & Palmer.

Pinguicula caudata, Schlecht. At Guanajuato (Dugès); 694 Parry & Palmer.

Bignonia buccinatoria, Mairet. At San Luis Potosi (746 Schaffner), and in cultivation at Guanajuato (Dugès); 695 Parry & Palmer.

Chilopsis saligna, Don. At Uvalde, Texas (1000), at Parras, Coahuila (1001), and at San Luis Potosi (745 Schaffner).

Tecoma stans, Juss. In the mountains east of Saltillo (1002), and at San Lorenzo de Laguna, Coahuila (1003).

Martynia proboscidea, Glox. At Laredo, Texas (2027).

MARTYNIA FRAGRANS, Lindl. At San Luis Potosi (747 Schaffner), and at Guanajuato (Dugès), where it is called "Toritos"; 697 Parry & Palmer.

ELYTRARIA BROMOIDES, Oersted. At Guajuco, Nuevo Leon (2029). Quite distinct from *E. tridentata*, Vahl, to which it is referred by Hemsley.

CALOPHANES DECUMBENS, Gray. Apparently the same as *C. Schiedeana*, Nees, from which *C. Jasminum-Mexicanum*, Nees, is probably not distinct. At Saltillo (1009, 2032), at Lerios in the high mountains east of Saltillo (1010), and at San Luis Potosi (647 Schaffner).

CALOPHANES LINEARIS, Gray. In the Sierra Madre, south of Saltillo (2033).

RUELLIA TUBEROSA, Linn. At Guadalupe (1006), and Sutherland Springs, Texas (1007, 2031), and at Saltillo.

RUELLIA PARRYI, Gray. At Parras, Coahuila (1008). Flowers noted as light-purple with darker veins in the throat.

STENANDRIUM DULCE, Nees. At Laredo, on the Rio Grande (1005), and at Lerios, Coahuila (2030); 703 Parry & Palmer.

SIPHONOGLOSSA PILOSELLA, Torr. At Eagle Pass (1012), and at Corpus Christi, Texas (2034), and in the mountains northeast of Monclova, Coahuila (1011); 701½ Parry & Palmer.

DIANTHERA PARVIFOLIA, Benth. & Hook. At San Antonio, Texas (1015). Also a taller and stouter very glandular-pubescent form, at Monterey, Nuevo Leon (1014), the same as 1214 Coulter. This species might perhaps well be referred to *Carlowrightia*.

JACOBINIA INCANA, Benth. & Hook. At Guajuco (997) and Monterey, Nuevo Leon (998); 704 and 704½ Parry & Palmer.

JACOBINIA MOHINTLI, Benth. & Hook. At San Luis Potosi (112 Schaffner), and at Guanajuato (Dugès). Known as "Muicle."

ANISACANTHUS WRIGHTII, Benth. & Hook. At Uvalde (2035).

ANISACANTHUS VIRGULARIS, Nees. In the mountains east of Saltillo (1016), and at San Luis Potosi (744 Schaffner); 706 Parry & Palmer. Calyx-teeth from triangular and scarcely as long as the tube to lanceolate and twice longer than the tube; flowers "scarlet."

ANISACANTHUS PUMILUS, Nees. Leaves somewhat broader than in the last, the linear calyx-teeth many times longer than the very short tube; flowers "light buff." At Parras, Coahuila (1017); 706½ Parry & Palmer.

DICLIPTERA BRACHIATA, Spreng. At San Antonio, Texas (1013), a villous form with small leaves.

Tetramerium hispidum, Nees. At Soledad, Coahuila (1089), and at Guanajuato (Dugès); 700 Parry & Palmer.

Tetramerium ——? Low and branching, woody at base, rough-puberulent throughout: leaves linear-oblong, 6 to 12 lines long, attenuate to a short petiole: spikes short, terminal; bracts thin, narrowly ovate, rounded or subcordate at base and nearly sessile, acute: calyx a line long, the lanceolate teeth exceeding the tube; corolla 9 lines long, very narrowly tubular, pubescent, the limb 3 lines long. — In the Caracol Mountains, southeast of Monclova (1004).

Lantana Camara, Linn. At Sutherland Springs, Texas (1022), and at Guanajuato (Dugès); 707 Parry & Palmer. Dugès gives the popular name "Frutilla."

Lantana macropoda, Torr. At Laredo, on the Rio Grande (1029, 1030), and at Parras, Coahuila (1027); 711 Parry & Palmer, in part.

Lantana canescens, HBK. At Monterey, Nuevo Leon (1028); 708 Parry & Palmer. Identical with 2232 Berlandier, which is referred to this species by De Candolle.

Lantana velutina, Mart. & Gal. At Guanajuato (Dugès); 709 Parry & Palmer.

Lippia purpurea, Jacq. f. At Soledad, Coahuila (1023), and in the San Miguelito Mountains, San Luis Potosi (643 Schaffner). Flowers "white, becoming yellow."

Lippia graveolens, HBK. At Soledad (1025) and at Monclova, Coahuila (1026).

Lippia (Aloysia) macrostachya. Shrubby, pubescent throughout with short spreading hairs: leaves broadly ovate to ovate-oblong or oblong-elliptical, truncate or slightly cordate at base, obtuse, crenately toothed, rugosely veined, densely pubescent and canescent beneath, shortly petioled, 3 to 12 lines long, often all small: spikes loose and elongated: bracts linear-lanceolate: flowers short-pedicellate or subsessile: calyx 2 lines long, the tube densely hispid and lobes narrow; corolla twice longer, "magenta-color": style shorter than the calyx. — In the mountains east of Saltillo (1032), and in the Caracol Mountains southeast of Monclova, Coahuila (1033). The same as 190 and 323 Gregg (*L. Wrightii*, var. *macrostachya*, Torr. in Bot. Mex. Bound. 127, and Gray, Syn. Fl. 2. 338), and 712½ Parry & Palmer, which is referred to *L. Wrightii*. That species has the pubescence more tomentose, the smaller flowers in shorter and closer spikes, broader bracts, and the less rugose leaves more or less cuneate at base. The Peruvian *L. scordioides* more nearly resembles *L.*

Wrightii, but has larger more oblong and more rugose leaves, narrower bracts and narrower calyx-teeth.

Lippia lycioides, Steud. At San Antonio (1035), Uvalde (1036), Bluffton (2036), and Laredo, Texas (1034), in the mountains east of Saltillo (1037), and at San Luis Potosi (646 Schaffner); 712 Parry & Palmer.

Lippia nodiflora, Michx. At Sutherland Springs, Texas (1038), at Soledad, Coahuila (1039), and at San Luis Potosi (644 Schaffner, in part).

Lippia lanceolata, Michx. At San Luis Potosi (644 Schaffner, in part); 710 Parry & Palmer, and 711 in part. A small-leaved nearly prostrate form, probably *L. reptans*, HBK.

Priva tuberosa. Root tuberous; branching from the base and decumbent, subvillous-pubescent: leaves sessile, oblong, narrowed at base, coarsely toothed mostly toward the apex, strigose-pubescent, 6 to 12 lines long: spikes short, terminal: fruiting calyx 4 lines long, pubescent, unequally toothed, contracted above the nutlets which fill the dilated base: nutlets 1½ lines long, irregularly and coarsely reticulated. — In the San Miguelito Mountains (717 Schaffner).

Verbena polystachya, HBK. At San Lorenzo de Laguna (1040), and a form with the calyx very pubescent, from the Sierra Madre, south of Saltillo.

Verbena urticæfolia, Linn. At Guanajuato (Dugès). These two species approach each other very closely.

Verbena ——? Allied to *V. polystachya*. Densely pubescent with stiff hairs, shorter and more appressed on the leaves, which are lanceolate, incised and lobed at base; panicle small. Perhaps a hybrid between *V. polystachya* or *V. urticæfolia* and *V. xutha*. At Saltillo (2037).

Verbena officinalis, Linn. A very slender somewhat strigose narrow-leaved form, at Sutherland Springs, Texas (1043), and at San Lorenzo de Laguna (1042). Also a variety (?), of similar habit, but more hirsute throughout, and the flowers larger, the slender corolla-tube twice longer than the calyx; at Guajuco, Nuevo Leon (1041). A form with the oblong-lanceolate leaves merely toothed is found in the mountains near San Luis Potosi (718 Schaffner), and at Guanajuato (Dugès). 917 Parry & Palmer is the more usual larger-leaved form of the species.

Verbena canescens, HBK. At Monterey, Nuevo Leon (1044), and at San Luis Potosi (719 Schaffner); a dwarf form, with small ovate leaves, at Laredo, Texas (2040); and a dwarf variety (?), with

ovate to oblong incised leaves, bracts equalling the calyx, and large flowers (5 lines long), at Corpus Christi, Texas (2038).

Verbena remota, Benth. Annual, with slender conspicuously bracted spikes, the fruit shorter and leaves more dissected than in the last species, to which it has been referred. At San Luis Potosi (720 Schaffner); 722 Parry & Palmer. 174 Hartweg and 361 Bourgeau are the same. It has also been collected by Mr. Pringle at Gardiner's Spring in Arizona.

Verbena ciliata, Benth. At Corpus Christi (1046) and at Guadalupe, Texas (2039), at Monclova, Coahuila, at Monterey, Nuevo Leon (1045), and at San Luis Potosi (717 Schaffner); 718, 719 and 720 Parry & Palmer.

Verbena xutha, Lehm. Sierra Madre, south of Saltillo (1047).

Verbena bracteosa, Michx. At San Lorenzo de Laguna, Coahuila (1048); 715 Parry & Palmer.

Verbena bipinnatifida, Nutt. At Sutherland Springs (1049).

Verbena Wrightii, Gray. At Lerios, in the high mountains east of Saltillo (1052), and near Morales, San Luis Potosi (716 Schaffner). Also a variety (?), with the more dissected foliage of the last species, but with the broad and short calyx-teeth of *V. Wrightii;* at Lerios, Coahuila (1050), and at Guanajuato (Dugès), and the same as 1149, 1150 Coulter, and 26 Gregg. The species appears to vary in the size of the glandular appendage to the anthers.

Callicarpa Americana, Linn. At Sutherland Springs (1054).

Mentha arvensis, Linn. At Saltillo (1061).

Mentha rotundifolia, Linn. At Parras, Coahuila (1090), and near Morales, San Luis Potosi (683 Schaffner).

Cunila secunda. Herbaceous, pubescent: leaves ovate-oblong, acuminate, rounded at base, entire, very shortly petiolate, an inch long or less, finely pubescent above, canescently subtomentose beneath: inflorescence leafy, secund, the rather loose axillary pedunculate cymes about equalling the gradually reduced leaves, pubescent: calyx a line long, with short acute teeth: corolla nearly 3 lines long: stamens long-exserted. — Guanajuato (Dugès); known as "Poleo del cerro."

Micromeria Xalapensis, Benth. At Guajuco, Nuevo Leon (1055); referred by Hemsley to *M. Brownei*, Benth.

Hedeoma Drummondii, Benth. At Sutherland Springs, Texas (1058), in the Sierra Madre, south of Saltillo (1057), and in the San Miguelito Mountains (679 Schaffner); 738 Parry & Palmer.

Hedeoma costata, Hemsl. Bot. Biol. Centr.-Amer. 2. 547. At Lerios, in the high mountains east of Saltillo (1059).

HEDEOMA TENELLA, Hemsl., l. c., 549. At Guajuco, Nuevo Leon (1060); also at Saltillo, with leaves broadly ovate, and rounded or subcordate at base. The species is very near to *H. dentata*, Torr.

HEDEOMA PALMERI, Hemsl., l. c., 548, t. 69, B., fig. 6–9. In the San Miguelito Mountains, San Luis Potosi (637 Schaffner); 728 Parry & Palmer.

POLIOMINTHA GLABRESCENS, Gray in Hemsl. Bot. Biol. Centr.-Amer. 2. 549. At Soledad, Coahuila (1056). Flowers white, with purple dots on the lower lip. Resembling sage in taste and used in cooking.

SALVIA TILIÆFOLIA, Vahl. At Soledad, Coahuila (1062), and at San Luis Potosi (674 Schaffner); 743 and 746½ Parry & Palmer.

SALVIA CHAMÆDRYOIDES, Cav. In the San Rafael Mountains, San Luis Potosi (663 Schaffner); 750, 751½ and 753 Parry & Palmer. Also a form with less hoary and scarcely at all crenate leaves, at Lerios (1064) and Parras, Coahuila (1072), and in the San Miguelito Mountains, San Luis Potosi (664 Schaffner). 751 Parry & Palmer is probably a still smoother and thinner-leaved form of the species.

SALVIA FARINACEA, Benth. At Bluffton (1066), and a form with nearly entire linear leaves at Sutherland Springs, Texas (1065).

SALVIA BALLOTÆFLORA, Benth. At San Antonio, Texas (1070), at Lerios (1068), Parras (1067), and Monclova, Coahuila (1069), and in the San Rafael Mountains, San Luis Potosi (670 Schaffner).

SALVIA GREGGII, Gray. At Lerios, in the high mountains east of Saltillo (1071).

SALVIA RŒMERIANA, Scheele. In the mountains east of Saltillo (1073).

SALVIA COCCINEA, Linn. At Uvalde (1076) and at Corpus Christi, Texas (1075, nearly glabrous), and at Guajuco, Nuevo Leon (1074, very hispid and the leaves tomentose beneath).

SALVIA PENTSTEMONOIDES, Kunth. At Sutherland Springs, Texas (1077).

SALVIA REGLA, Cav. At Lerios, Coahuila (1079), at San Rafael, San Luis Potosi (665 Schaffner), and at Guanajuato (Dugès); 741 Parry & Palmer. Dugès gives the popular name "Mirto rojo del cerro."

SALVIA AZUREA, Lam., var. GRANDIFLORA, Benth. At Sutherland Springs, Texas (1091).

SALVIA GLECHOMÆFOLIA, HBK. At Lerios in the high mountains east of Saltillo (1097), and in the Sierra Madre, south of that

place (1098). The foliage appears to be very variable, sometimes on the same plant, from broadly ovate-triangular in the typical form (756 Parry & Palmer), to oblong-lanceolate (as in 406 Gregg and 1115 Coulter, which are probably *S. prunelloides*, HBK.), and to linear, as in 761 Parry & Palmer and 396 Bourgeau. *S. Arizonica*, Gray, is a very closely allied species, with acuter and more coarsely toothed leaves.

Salvia Mexicana, Linn. At Guanajuato (Dugès). A form near to this species, but with the calyx and corolla only half as large, was collected in the Caracol Mountains, Coahuila (1096); 757, 758 Parry & Palmer.

Salvia nana, HBK. In the San Rafael Mountains, San Luis Potosi (680 Schaffner); 745, 746 Parry & Palmer.

Salvia Hispanica, Linn. At San Luis Potosi (675 and 1053 Schaffner); known as "Chia."

Salvia angustifolia, Cav., var. glabra, Gray. A low slender stoloniferous form, with short and broad calyx. At San Luis Potosi (672 Schaffner); 760 Parry & Palmer.

Salvia lanceolata, Brouss. In swamps near San Luis Potosi (673 Schaffner); 744 Parry & Palmer. Very fetid.

Salvia leucantha, Cav. Near Santa Maria, San Luis Potosi (669 Schaffner).

Salvia lasiantha, Benth. In the San Rafael Mountains, San Luis Potosi (671 Schaffner); 730, 731 Parry & Palmer.

Salvia patens, Cav. In the San Miguelito Mountains, San Luis Potosi (676 Schaffner), and at Guanajuato (Dugès); 759 Parry & Palmer. Dugès gives the name "Pajaros azules grandes."

Salvia fulgens, Cav. In the mountains near Morales, San Luis Potosi (667 Schaffner); with rather small leaves and flowers. Known as "Mirto grande."

Salvia Lindenii, Benth. At Guanajuato (Dugès).

Salvia microphylla, HBK. In the San Miguelito Mountains, San Luis Potosi (662 Schaffner); 747, 748 Parry & Palmer. Apparently distinct from the next.

Salvia Grahami, Benth. Leaves truncate or subcordate at base. In the mountains near San Luis Potosi (660 Schaffner); 739 Parry & Palmer. Known as "Mirto." — Also a variety (probably *S. obtusa*, Mart. & Gal.) with the leaves somewhat cuneate at base. Near Morales, San Luis Potosi (661 Schaffner; 394 and 396 of his previous collection); 754 Parry & Palmer, more tomentose; 1093 Coulter.

Salvia axillaris, Moç. & Sesse. In the mountains near San Luis Potosi (648 Schaffner); 698 Parry & Palmer; 1118 Coulter. A very peculiar species, with very much of the habit, as noted by Bentham, of a *Thymus* or *Satureia*. The long slender stems become procumbent and rooting at the nodes. The leaves vary from oblong-linear and acute to broadly oblanceolate and obtuse, rarely sparingly toothed, 3 to 5 lines long: pedicels shorter than the leaves: fruiting calyx 4 lines long; corolla very narrowly tubular, 6 to 9 lines long, the lower lip much exceeding the upper, probably pale blue or pink; anthers purple. *S. cuneifolia*, Benth. (as represented by 1118 Coulter), is apparently only a form of this species, with the rather broader leaves often toothed at the summit.

Salvia ——? Of the *S. Grahami* group, the stouter erect stems somewhat villous-pubescent: leaves ovate-oblong, acute, cuneate or rounded at base, acutely toothed: corolla "bright magenta," 16 lines long, the very broad lower lip much exceeding the upper. — In the Sierra Madre, south of Saltillo, Coahuila (1078); 1096 Coulter, in part.

Salvia ——? Stoloniferous and rooting at base, the erect slender stems somewhat woody, a span high, pubescent with short spreading hairs on opposite sides: leaves rather thick, nearly glabrous, ovate to oblong-ovate, cuneate at base, acutish, rather acutely toothed, 6 to 15 lines long, short-petioled; bracts subpersistent, ovate-lanceolate, acuminate, 1–2-flowered: calyx purple, dilated campanulate, 6 lines long or more, with broad acute teeth, the upper lip entire; corolla an inch long, apparently reddish-purple, broadly tubular, the lower lip a little exceeding the upper: style bearded. — In the San Rafael Mountains, San Luis Potosi (666 Schaffner); 740 Parry & Palmer.

Salvia ——? Near *S. elegans:* stems slender, herbaceous, puberulent on opposite sides: leaves thin, on very slender petioles, very nearly glabrous, oblong-ovate, cuneate at base, crenate, 1 to 1½ inches long: calyx tubular, 4 lines long, with short acute teeth; corolla bright scarlet, 9 lines long, narrowly tubular, the broad lower lip about equalling the upper. — At Guanajuato (Dugès), and known as "Mirto rojo chico."

Salvia ——? Stems decumbent, herbaceous, villous and pubescent, a span high: leaves broadly ovate, truncate or cordate at base, rarely subhastate, coarsely toothed or entire, obtuse or acute, an inch long or less; bracts deciduous: verticils 2–6-flowered: calyx campanulate, 3 or 4 lines long, the upper lip entire or truncate, the lower shortly bifid; corolla blue, 9 lines long, the very broad lower lip

twice longer than the upper. — In the San Miguelito Mountains, San Luis Potosi (678 Schaffner).

Salvia ——? Near *S. amarissima*, Ort. (752 Parry & Palmer), but canescently puberulent and not at all hispid. In shaded places near Morales, San Luis Potosi (677 Schaffner).

Salviastrum Texanum, Scheele. At Sutherland Springs (1102).

Monarda citriodora, Cerv. At San Lorenzo de Laguna, Coahuila (1082), and at Guajuco, Nuevo Leon (1080).

Monarda punctata, Linn. At Lamar, on Copano Bay, Texas (1081).

Cedronella Mexicana, Benth. In the mountains near Morales, San Luis Potosi (682 Schaffner); 762 Parry & Palmer. Known as "Touroujil."

Salazaria Mexicana, Torr. At Parras, Coahuila (1083).

Scutellaria Drummondii, Benth. At Lamar, on Copano Bay, Texas (2042), in the Sierra Madre, south of Saltillo (1085), and in the mountains eastward (1084), and at San Miguelito in San Luis Potosi (642 Schaffner).

Scutellaria Wrightii, Gray. At Sutherland Springs (1086) and Bluffton, Texas (1087).

Brunella vulgaris, Linn. At Lerios, Coahuila (1088); 733½ Parry & Palmer.

Physostegia Virginiana, Benth., var. obovata, Gray. At Saltillo (2043).

Marrubium vulgare, Linn. About San Luis Potosi (681 Schaffner).

Stachys agraria, Cham. & Schlecht. At Lerios (1092), in the Sierra Madre, south of Saltillo (1093), and at Guajuco (1095).

Stachys Drummondii, Benth. In the Caracol Mountains, southeast of Monclova, Coahuila (1094), and at San Luis Potosi (684 Schaffner); 733, 734 and 735 Parry & Palmer, the latter referred to *S. agraria*.

Stachys Bigelovii, Gray. At San Luis Potosi (685 Schaffner).

Stachys coccinea, Jacq. A form with very short and broad abruptly aristate calyx-teeth. Near San Rafael, San Luis Potosi (686 Schaffner), and at Guanajuato (Dugès); 732 Parry & Palmer, the ordinary form.

Isanthus cæruleus, Michx. At Georgetown, Texas (1103).

Tetraclea Coulteri, Gray. In the mountains east of Saltillo (1104), and in the San Miguelito Mountains, San Luis Potosi (636 Schaffner); 726 Parry & Palmer.

Teucrium Canadense, Linn. At Saltillo, Coahuila (1099).

Teucrium Cubense, Linn. At San Lorenzo de Laguna, Coahuila (1101), at Monterey, Nuevo Leon (1100), and in the San Miguelito Mountains (687 Schaffner); 727 Parry & Palmer. 1101 is referred by Hemsley to *T. laciniatum*, Torr., which is not clearly distinguished from this species, but is perhaps best defined by the decidedly perennial root, much larger flowers, and more elongated calyx-teeth.

Plantago major, Linn. At Parras, Coahuila (1105), and a very paniculately branched form (1106).

Plantago Patagonica, Jacq. Between the Frio and Nueces Rivers, Texas (1110), and at San Luis Potosi (659 Schaffner, in part).

Plantago Mexicana, Link. A reduced depressed form, with the scapes shorter than the leaves. At San Luis Potosi (659 Schaffner, in part); 765 Parry & Palmer, at least in part. Perhaps the species should be included among the forms of *P. Patagonica*.

Plantago Virginica, Linn., var. (?) (Var. *longifolia*, Gray, Syn. Flora, 2. 392, in part.) Scapes procumbent, very short: leaves pinnatifid-toothed: capsule exceeding the sepals: seeds red, over a line long, and broader in proportion than in *P. Virginica*. — Between the Frio and Nueces Rivers, Texas (1108), at San Lorenzo de Laguna, Coahuila (1109), at Monterey, Nuevo Leon (1107), at San Luis Potosi (656 Schaffner) and in the San Miguelito Mountains (655 Schaffner). Collected also by Dr. Gregg at Buena Vista, and by Berlandier at Matamoros (2128), together with a more erect form. 763 Parry & Palmer is referred to this species. In the ordinary forms of the species the shorter sepals about equal the capsule and the brown seed is less than a line long.

Plantago hirtella, HBK., var. (?) Leaves narrowly lanceolate, attenuate into a long winged petiole, rather sparingly pubescent, entire or obscurely toothed: sepals glabrate, or somewhat pubescent on the midvein, shorter than the capsule: seeds olive-colored. — At San Luis Potosi (657 Schaffner). 400 Bourgeau and 926 Coulter (referred to *P. Virginica*), 1128 Bourgeau, and 174 Botteri appear to be the same.

Plantago caulescens. Caulescent, probably perennial, the caudex usually branching and the leafy stems 1 to 4 inches long: leaves linear, attenuate each way, silky-pubescent, 2 to 6 inches long by 1 or 2 lines wide: peduncles exceeding the leaves, erect: spikes capitate, 3 to 6 lines long: bracts ovate, acutish, shorter than the calyx, the margins scarious below: sepals 2 lines long, nearly uniform, but the

inner almost wholly scarious: corolla-lobes 2 lines long, dark-brown in the centre: stamens 4, or none: style very pubescent, short or long-exserted: seeds 2. — In the San Rafael Mountains, San Luis Potosi (658 Schaffner). Mature capsules not seen.

Mirabilis Jalapa, Linn. At Guanajuato (Dugès); 775 Parry & Palmer.

Mirabilis longiflora, Linn. At Guanajuato (Dugès).

Oxybaphus Cervantesii, Sweet. In the Sierra Madre, south of Saltillo (1111). The specimens are referred by Hemsley to *O. viscosus*, but they accord fairly with the figure and descriptions, and with cultivated specimens of this species. 1314 Berlandier, 348 and 511 Gregg, and 912 Coulter are the same.

Oxybaphus glabrifolius, Vahl. At Parras, Coahuila (1112); a small-leaved form.

Oxybaphus aggregatus, Vahl. At the same locality (1113), and in the San Miguelito Mountains, San Luis Potosi (177 Schaffner); 768 Parry & Palmer.

Oxybaphus angustifolius, Sweet. Near San Miguel (179 Schaffner); 767 Parry & Palmer.

Nyctaginea capitata, Chois. At Laredo, Texas (1114).

Allionia incarnata, Linn. At San Luis Potosi (175 Schaffner).

Boerhaavia Palmeri. Annual; stems ascending from a procumbent base, sparingly branched, rough-puberulent and viscid: leaves ovate, obtuse or acute, truncate at base, ½ inch long, on short petioles: flowers shortly pedicellate in few-flowered cymes; bracts small: perianth spreading, 3 or 4 lines long, light pink: filaments exserted: fruit oblong-clavate, obtuse, glabrous, 1½ lines long, obtusely angled, channelled on the sides. — Allied to *B. linearifolia*. At Saltillo (1120).

Boerhaavia linearifolia, Gray. Leaves from linear to lanceolate. In the Sierra Madre, south of Saltillo (1121), and in the mountains northeast of Monclova, Coahuila (1122).

Boerhaavia erecta, Linn. At Monclova (1123).

Boerhaavia eriosolena, Gray. At San Lorenzo de Laguna, Coahuila (1124).

Boerhaavia viscosa, Lag. & Rodr. At San Luis Potosi (176 Schaffner).

Boerhaavia gibbosa, Pavon. (*Senkenbergia annulata*, Schauer.) At San Lorenzo de Laguna, Coahuila (1125); 771 Parry & Palmer. Considering the diversities in the inflorescence, fruit and foliage, which occur in the other species of *Boerhaavia*, there seems to be too little reason for separating the genus *Senkenbergia*, especially if it be made

to include *B. spicata*, etc., as is done by Hook. f. in Benth. & Hook. Gen. Pl. 3. 5. Farther division of the genus would be equally justifiable.

Acleisanthes longiflora, Gray. Trailing; flowers white with a purplish tinge, rather fragrant. At Laredo, on the Rio Grande (1115), and at Parras, Coahuila (1116).

Acleisanthes Berlandieri, Gray. Flowers white, fragrant. At Uvalde, Texas (1117).

Selinocarpus Palmeri, Hemsl. in Bot. Biol. Centr.-Amer. 3. 6, t. 70. At San Lorenzo de Laguna, Coahuila (1118).

Selinocarpus angustifolius, Torr. Same locality (1119).

Pentacæna polycnemoides, Bartl. (*P. ramosissima*, Hook. & Arn.) At San Luis Potosi (129 Schaffner); 64 Parry & Palmer.

Achyronychia Parryi, Hemsl. Near Morales, San Luis Potosi (132 Schaffner); 53 and 64½ Parry & Palmer.

Paronychia Mexicana, Hemsl. At San Luis Potosi (133 Schaffner); 65 Parry & Palmer.

Corrigiola andina, Trian. & Planch. At San Luis Potosi (136 Schaffner); 54 Parry & Palmer.

Celosia paniculata, Linn. At San Antonio, Texas (1147).

Celosia Palmeri. Glabrous, the herbaceous branching stems about 2 feet high: leaves lanceolate, acute, somewhat hastately lobed, cuneate at base and shortly petioled, ½ to 2 inches long: flowers sessile, rather crowded in short terminal naked panicles; bracts broadly ovate, acute, a third to one half as long as the brownish lanceolate acute many-nerved sepals (2½ lines long): stigmas 2. — At Monclova, Coahuila (1148); also in the Parry & Palmer collection (1144), collected on the route from San Luis Potosi to Tampico. It is allied to *C. paniculata* and *C. virgata*, and is referred doubtfully to the latter by Hemsley. It differs in its foliage, inflorescence, and broader and less acuminate bracts and sepals, the latter with more numerous and fainter nerves.

Amarantus spinosus, Linn. At Laredo (1126).

Amarantus chlorostachys, Willd. At the same locality (1127); 786 Parry & Palmer is referred to this species.

Amarantus retroflexus, Linn. At Parras, Coahuila (1128, 2043bis); 785 and 785½ Parry & Palmer.

Amarantus polygonoides, Linn. At Guadalupe, Texas (1129).

Amarantus albus, Linn. A *Scleropus* state (the same as 582 Wright, 1849, in part), corresponding to *Scleropus crassipes*, Moq., which is a similar state of the last species.

Amarantus Palmeri, Watson. The ordinary erect form, 6 to 7 feet high, and also procumbent. At San Luis Potosi (886 Schaffner); 786 Parry & Palmer. Popularly known as "Quelite," and used as a substitute for spinach. 785 Schaffner, from the same locality, is a form with very slender spikes and more attenuate bracts. 786½ Parry & Palmer, referred to *A. Blitum*, Linn., is *A. Wrightii*, Watson.

Acnide tamariscina, Gray. The staminate form. In the region west of San Antonio, Texas (1131).

Guilleminea illecebroides, HBK. At San Luis Potosi (789 Schaffner), and at Guanajuato (Dugès); 787 and 788½ Parry & Palmer.

Cladothrix lanuginosus, Nutt. At Laredo, on the Rio Grande (1188), and at San Lorenzo de Laguna, Coahuila.

Alternanthera Achyrantha, R. Br. At San Antonio, Texas (1145), at San Luis Potosi (881 Schaffner), and at Guanajuato (Dugès); 788 Parry & Palmer, in part. Known as "Tianguis" (Dugès), or "Trianguis Pepotta" (Schaffner). 1143 Parry & Palmer is var. *leiantha*, Seub.

Gossypianthus rigidiflorus, Hook. At Bluffton (1143), and at Laredo, Texas (1144); 788 Parry & Palmer, in part. The filaments have a dilated deltoid base, and it is therefore not probable that *G. tenuifolius* is distinct, as was pointed out by Dr. Torrey in Bot. Mex. Bound. 180.

Gomphrena tuberifera, Torr. At Soledad, Coahuila (1132).

Gomphrena decumbens, Jacq. (?) At San Luis Potosi (880 Schaffner), and at Guanajuato (Dugès). The same as 789 Parry & Palmer, 1371 Coulter, and 633 Bourgeau, which are referred to this species, though differing in various respects from the original description and figure.

Froelichia Floridana, Moq. At Sutherland Springs (1139).

Froelichia gracilis, Moq. At Bluffton, Texas (1140).

Froelichia interrupta, Moq. A variety with narrowly oblanceolate leaves 2 or 3 inches long. In the Sierra Madre, south of Saltillo (1141), and in the Caracol Mountains, southeast of Monclova (1142). The more usual form, with ovate to obovate leaves, was collected in the Morales Mountains, San Luis Potosi (877 Schaffner), and at Guanajuato (Dugès); 793 Parry & Palmer. Known at Guanajuato as "Elotitos."

Hebanthe Palmeri. Climbing; stem angled, the young branches and leaves sparingly pubescent with very short rufous appressed hairs,

becoming glabrous: leaves small, ovate to lanceolate, obtuse or acute, on very short petioles: spikes 3 to 5 lines long, in short axillary and terminal racemes, 1 to 3 inches long; bracts glabrous, scarious, rounded and concave: flowers globose; basal hairs very copious; perianth-segments somewhat villous, ovate: filaments very short; staminodia none: ovary glabrous; stigmas subulate, stout, nearly sessile: seed subglobose; cotyledons broad. — At Guajuco, Nuevo Leon (1138). Mentioned as probably distinct by Hemsley, but under a wrong number. Fully developed leaves are wanting.

IRESINE CASSINÆFORMIS, Schauer in Linnæa, 19. 709 (?) At Monterey, Nuevo Leon (1133). Agreeing but imperfectly with the description. Leaves only slightly roughish-puberulent above, densely white-tomentose beneath, 1 to 3 inches long, oblong-lanceolate, acute or acuminate, cuneate at base: panicle ample, the fruiting rather dense and smaller: sterile flowers nearly glabrous, a line long, white and scarious, the staminodia linear, and the oblong-obovate ovary without stigmas; fertile flowers with very thin equal glabrous bracts half the length of the somewhat rigid oblong obtuse sepals; hairs mostly basal: utricle oblong.

IRESINE LATIFOLIA, Benth. & Hook. At Monterey, Nuevo Leon (1134), and at San Luis Potosi (873 Schaffner); 792 Parry & Palmer.

IRESINE CELOSIOIDES, Linn. A form with rather large flowers in dense panicles, the leaves 1 or 2 inches long, acute or but slightly acuminate. At Georgetown (1135) and at Uvalde, Texas (1137), and in the Caracol Mountains, southeast of Monclova, Coahuila (1136); 792½ Parry & Palmer.

IRESINE ——? An imperfect specimen of a species allied to *I. latifolia*, but distinct from it. In all the flowers examined the ovary had three stigmas. At Guanajuato (Dugès).

IRESINE ——? The white clustered spikes in long-peduncled panicles, and the very narrow and thin sepals very densely villous. In the San Miguelito Mountains (876 Schaffner); 791 Parry & Palmer, in part.

DICRAURUS DIFFUSUS, Hook. f. In woods near Morales, San Luis Potosi (878 Schaffner); 790 Parry & Palmer.

CHENOPODIUM FŒTIDUM, Linn. In the Sierra Madre, south of Saltillo (1150), and at San Luis Potosi (853 Schaffner). *C. cornutum*, Benth. & Hook. (*Teloxys cornuta*, Torr.), to which 778 Parry & Palmer may be referred, appears to be distinguished by its smoothness and by the firmer and more distinctly appendaged sepals.

Chenopodium Berlandieri, Moq. A farinose form with small hastate-ovate leaves. At Parras, Coahuila (1151); 780 Parry & Palmer, in part.

Chenopodium murale, Linn. In the streets of Corpus Christi, Texas (1152).

Chenopodium Fremontii, Watson. At San Luis Potosi (851 Schaffner).

Chenopodium ambrosioides, Linn. Various forms. At San Antonio, Texas (1154), at San Lorenzo de Laguna, Coahuila (1153), at San Luis Potosi (852 Schaffner), and at Guanajuato (Dugès), where it is known as "Epazote"; 779½ Parry & Palmer.

Chenopodium stellatum. Erect, low (3 or 4 inches high), branched and leafy, glandular-pubescent: leaves entire, linear, obtuse, attenuate to the base, 3 to 9 lines long: flowers small, in numerous axillary subcircinate spikes shorter than the leaves; calyx 6–8- (usually 7-) parted, the narrow segments becoming strongly carinate and somewhat winged on the back, covering the very small erect seed. — In the mountains northeast of Monclova, Coahuila (1155). Allied to *C. carinatum*.

Atriplex parvifolia, HBK. (?) According very well with the description, except that the fruiting bracts are usually not muricate. At Parras, Coahuila (1156), and at San Luis Potosi (36 Schaffner); 779 Parry & Palmer, referred to *A. arenaria*, and 780, in part.

Atriplex acanthocarpa, Watson. At Guadalupe, Texas (1157). Also at San Lorenzo de Laguna, Coahuila (1161), a stouter variety with thicker, densely scurfy, and more sinuate-toothed and undulate leaves. It was collected by Dr. Gregg at Bolson de Mapimi and named *Obione pachylepis* by Torrey in herbarium.

Atriplex Texana, Watson. At Guadalupe (1158) and at Corpus Christi, Texas (1159). 407 Bourgeau and 436 of Schaffner's previous collection are very similar, but with more narrowly margined and less crested fruit, and are probably *A. linifolia*, Humb. & Bonpl., and *A. polygama*, Sesse.

Atriplex oppositifolia, Watson. At Corpus Christi (1160).

Atriplex canescens, James. At Laredo, on the Rio Grande, at San Lorenzo de Laguna and Parras, Coahuila (1163), and at San Luis Potosi (35 Schaffner); 782 and 783 Parry & Palmer.

Eurotia lanata, Moq. In the Sierra Madre, south of Saltillo (1164).

Corispermum hyssopifolium, Linn., var. microcarpum, Watson. At Laredo, Texas (1165).

Suæda diffusa, Watson. At Saltillo, Coahuila (1167); 778½ Parry & Palmer.

Suæda Torreyana, Watson (?) At Parras, Coahuila (1168). A very doubtful form, collected also by Gregg at Cienega Grande.

Boussingaultia baselloides, HBK. In the Morales Mountains, San Luis Potosi (Schaffner); cultivated.

Rivina lævis, Linn. At San Antonio, Texas (1170), and at Guanajuato (Dugès). Nearly smooth, large-flowered, and with loose racemes, and perhaps to be so distinguished as only a variety of *R. humilis*, to which species 776 Parry & Palmer is to be referred.

Phytolacca octandra, Linn. At San Luis Potosi (887 Schaffner); 777 Parry & Palmer.

Phytolacca Mexicana, Sweet. Dugès sends imperfect flowering specimens, with fifteen stamens and about eight styles, probably of this species (and *P. purpurascens*, Br. & Bouché), and not to be referred to *P. icosandra*. Its popular name is "Congueran." It is the *P. octandra*? of Hook. & Arn. Bot. Beechey, collected by Barclay at Manzanilla and by Sinclair at San Blas, Tepic.

Eriogonum longifolium, Nutt. At Sutherland Springs (1171).

Eriogonum Jamesii, Benth. At Lerios, in the high mountains east of Saltillo (1172).

Eriogonum tenellum, Torr. At Parras (1173); and var. caulescens, Torr. & Gray, at Soledad, Coahuila (1174).

Eriogonum atrorubens, Engelm. In the Sierra Madre, south of Saltillo (1175).

Eriogonum Greggii, Torr. & Gray. In the same locality (1176).

Eriogonum annuum, Nutt. At Bluffton, Texas (1177).

Eriogonum multiflorum, Benth. At Sutherland Springs (1178).

Eriogonum ciliatum, Torr. In the mountains east of Saltillo, Coahuila (2088). Referred by Hemsley to *E. atrorubens*, Engelm.

Eriogonum Abertianum, Torr. Near San Rafael, San Luis Potosi (873 Schaffner); 795 Parry & Palmer.

Eriogonum Wrightii, Torr. In the San Miguelito Mountains, San Luis Potosi (874 Schaffner); 796 Parry & Palmer.

Polygonum aviculare, Linn. At San Antonio, Texas (1179).

Polygonum Pennsylvanicum, Linn. At Sutherland Springs, Texas (1180), and near Morales, San Luis Potosi (882 Schaffner).

Polygonum Persicaria, Linn. Near Morales (883 Schaffner).

Polygonum acre, Linn. At San Luis Potosi (884 Schaffner).

Rumex crispus, Linn. At Parras, Coahuila (1181), near Morales (903 Schaffner), and at San Luis Potosi (907 Schaffner).

Rumex Berlandieri, Meissn. At San Lorenzo de Laguna, Coahuila (1182).

Rumex Mexicanus, Meissn. At San Luis Potosi (904 and 906 Schaffner); 794 Parry & Palmer, apparently.

Antigonon leptopus, Hook. & Arn. At Guanajuato (Dugès). Commonly known as "Coamecatl."

Aristolochia brevipes, Benth. (*A. Wrightii*, Seem.) In the Sierra Madre, south of Saltillo (1183). — Var. acuminata is subtomentose, instead of villous-pubescent, with the leaves narrow and usually long-acuminate (1 to 2½ inches long), the basal lobes narrower and often elongated. It was collected by Wright (1701) in New Mexico, by Thurber (1025) in Sonora, by Lemmon (272) in the Santa Catalina Mountains, Arizona, and by Pringle near Camp Lowell; it is also in Schaffner's previous collection (47), from the mountains near San Luis Potosi. 766 Parry & Palmer in its foliage connects with the typical form.

Aristolochia pardina, Duchartre. At Colima, where it is known as "Huaco" (Dugès).

Anemopsis Californica, Hook. At Parras, Coahuila (1184), near Santa Maria del Rio, San Luis Potosi (532 Schaffner), and at Guanajuato (Dugès); "Yerba del Manzo."

Peperomia umbilicata, Ruiz & Pavon, var. macrophylla, C. DC. At San Luis Potosi (108 Schaffner), and at Guanajuato (Dugès); 802 Parry & Palmer.

Persea gratissima, Gaertn., var. Schiedeana, Meissn. In the mountains near Santa Maria del Rio (116 Schaffner), and at Guanajuato (Dugès). Known as "Ahuacate."

Litsea glaucescens, HBK., var. subsolitaria, Meissn. In the San Miguelito Mountains, San Luis Potosi (710 Schaffner), and at Guanajuato (Dugès); 798 Parry & Palmer.

Laurantihus calyculatus, DC. At Guanajuato (Dugès); 800 Parry & Palmer. The specimens accord with the figure and description. They seem also to be the same as 18 Coulter and 342 Andrieux, which are referred to *L. Schiedeanus*, Cham. & Schlecht. That species, however, is described as having the leaves attenuate at the apex and the flowers three inches long. The fruit with the present specimens is oblong-obovate, 5 lines long; embryo with 4 to 6 cotyledons. Known as "lugerto."

Euphorbia prostrata, Ait. At Sutherland Springs, Texas (1196), at Monclova, Coahuila (1193), and at Monterey, Nuevo Leon (1189); 816½ and 818 Parry & Palmer.

EUPHORBIA SERPENS, HBK. At San Lorenzo de Laguna, Coahuila (1192, 1195); 820 Parry & Palmer. Also var. RADICANS, Engelm., at Corpus Christi (1190), and Sutherland Springs (1191).

EUPHORBIA SERRULA, Engelm. At San Lorenzo de Laguna (1194); 810 Parry & Palmer, in part.

EUPHORBIA POLYCARPA, Benth. At Monterey, Nuevo Leon (1197), and at Juraz, Coahuila (1204). Also at San Lorenzo de Laguna (1205), a stout form, from a thick woody root, the involucres nearly smooth and unappendaged, and the capsules less pubescent.

EUPHORBIA MACULATA, Linn. At Bluffton (1198), Georgetown (1202), and Sutherland Springs, Texas (1208, 2048, 2049), and at Parras, Coahuila (1210).

EUPHORBIA VILLIFERA, Scheele. In the Caracol Mountains (1199); and in the Sierra Madre, south of Saltillo, a more naked form with coarsely toothed leaves, the same as 2084 Berlandier.

EUPHORBIA GLYPTOSPERMA, Engelm. At Laredo, on the Rio Grande (1200), Guadalupe (1201), and Sutherland Springs (2047).

EUPHORBIA FENDLERI, Torr. & Gray. At Sutherland Springs, Texas (1203).

EUPHORBIA ADENOPTERA, Bertol. At Soledad, Coahuila (1206), at Morales (855 Schaffner) and San Luis Potosi (1034 Schaffner, in part), and at Guanajuato (Dugès); 816 and 819 Parry & Palmer.

EUPHORBIA ALBOMARGINATA, Torr. & Gray. At Sutherland Springs (1207), and west of San Antonio, Texas (1212).

EUPHORBIA PRESLII, Guss. At Sutherland Springs (2050) and Bluffton, Texas (2051), at Parras (1209) and Monclova, Coahuila (1211), at San Luis Potosi (856 Schaffner, in part), and at Guanajuato (Dugès); 808 and 814 Parry & Palmer. Somewhat variable in pubescence, and quite so in the markings of the seeds, Schaffner's and Dugès' specimens having the seeds deeply pitted, rather than rugose. Popularly known as "Yerba de la Golondrina."

EUPHORBIA CUMBRÆ, Boiss. Agreeing very well with the description, but taller (6 to 9 inches high), the involucres pedicellate, and capsule angled. In the mountains north of Monclova (1213).

EUPHORBIA ZYGOPHYLLOIDES, Boiss. At Sutherland Springs, Texas (1214).

EUPHORBIA GRAMINEA, Jacq. At Parras, Coahuila (1215, 1216), and at San Luis Potosi (863 Schaffner).

EUPHORBIA ANTISYPHILITICA, Zucc. In the mountains west of Saltillo (1217), and about San Luis Potosi (867 Schaffner); 821 Parry & Palmer.

Euphorbia (Poinsettia) exclusa. Annual, erect, more or less tomentose throughout, a foot high, the strict rather stout branches becoming naked: leaves scattered, narrowly linear, attenuate to each end, entire or serrulate, the margin becoming revolute, 1 to 1½ inches long: involucres in a short terminal subsessile cyme, very shortly pedicelled, tomentose, hemispherical, the broad truncate lacerate lobes united at base in front of the very short orbicular tomentose glands: styles very short, stout, bifid: capsule tomentose, 2 lines long: seed caruuculate, oblong-quadrate, obsoletely tuberculate and rugose, 1½ lines long. — At San Lorenzo de Laguna, Coahuila (1218). Nearly allied to *E. eriantha*.

Euphorbia marginata, Pursh. At San Antonio, Texas (1219).

Euphorbia barbellata, Engelm. At Uvalde, Texas (1220).

Euphorbia heterophylla, Linn., var. gramixifolia, Engelm. At Uvalde (1221) and Georgetown, Texas (2052). Also a peculiar form, with the linear-lanceolate leaves sharply serrate and near the base coarsely toothed; at San Luis Potosi (859 Schaffner).

Euphorbia dentata, Michx. At Sutherland Springs, Texas (1223), at Juraz, Coahuila (1222), and at Monterey, Nuevo Leon. Also var. lasiocarpa, Boiss., at Parras, Coahuila (1224), and in the San Miguelito Mountains, San Luis Potosi (858 Schaffner); 805 Parry & Palmer.

Euphorbia campestris, Cham. & Schlecht. In the Sierra Madre, south of Saltillo (1225, 2054), and at Parras, Coahuila (1227), at Guajuco, Nuevo Leon (1226), in the San Rafael Mountains (865 Schaffner), and at San Miguelito (864 Schaffner) and San Luis Potosi (866 Schaffner), and at Guanajuato (Dugès); 803 Parry & Palmer. Different forms, but apparently all belonging to this species. Dugès gives the popular name "Yerba del Coyote."

Euphorbia Lathyris, Linn. At Saltillo, Coahuila (2059); by a garden fence.

Euphorbia angusta, Engelm. At Sutherland Springs, Texas.

Euphorbia acuta, Engelm. At Juraz, Coahuila.

Euphorbia (Cyttarospermum) tenera. A slender annual, about a foot high, sparingly pubescent, several times dichotomous: leaves thin, opposite, without stipular glands, shortly petiolate, elliptical, acutish at each end, 4 to 8 lines long: peduncles in the forks and terminal, solitary, 1 to 6 lines long: involucres glabrous, the tube nearly a line long, pubescent within, with oblong entire lobes: glands prominent upon a broad stipe, with an oblong ovate subconcave entire whitish appendage, the whole as long as the tube: ovary slightly

pubescent; styles bifid. — Near *E. delicatula*, Boiss. In the Sierra Madre, south of Saltillo (2053).

Euphorbia serpyllifolia, Pers. At San Luis Potosi (854 Schaffner, in part, and 1034 Schaffner, in part); 810, in part, and 811 Parry & Palmer.

Euphorbia ammatotricha, Boiss. (?) Very variable, annual or doubtfully perennial, glaucous and more or less villous, the leaves from round-cordate to linear-oblong, often coarsely toothed; the reniform glands with more or less conspicuous white appendages; capsule comparatively large, acutely angled; seed smooth. — At San Luis Potosi (854 Schaffner, in part, and 856, in part); 813 Parry & Palmer.

Euphorbia radians, Benth. In the San Miguelito Mountains (857 Schaffner); 822 Parry & Palmer.

Euphorbia sphærorrhiza, Benth. At Morales, San Luis Potosi (861 Schaffner); 807 Parry & Palmer.

Euphorbia calyculata, HBK. (?) At Guanajuato (Dugès). An imperfect specimen, with leaves (4 inches long) very acute and bristle-tipped, the lower side with the petiole and stem more or less tomentose; peduncles short and stout; floral bracts white, ovate, sessile, 4 lines long; lobes of the involucre broad and short, fimbriate; style short and stout.

Euphorbia (Zygophyllidium) biformis. Stems herbaceous from a tuberous root, a foot high or less, slender, dichotomous, puberulent: glandular stipules minute or obsolete; leaves opposite, shortly petioled, linear ($\frac{1}{2}$ to 2 inches long by 1 or 2 lines broad), or narrowly ovate-oblong (4 to 10 lines long by 2 to 4 broad), entire, obtuse, rounded or cuneate at base: peduncles short, axillary and terminal: involucres with inflexed quadrate lacerate lobes; appendages 4, rounded, whitish: styles short, thick, bifid: capsule $1\frac{1}{2}$ lines broad: seeds without caruncle, ovate, $\frac{2}{3}$ of a line long, irregularly pitted and tuberculate. — In the San Miguelito Mountains, San Luis Potosi (860 and 862 Schaffner); 806 Parry & Palmer. Collected by Schaffner in two forms, but differing only in foliage, as described.

Phyllanthus polygonoides, Spring. In the Caracol Mountains (1228), at Monclova, Coahuila, and at Monterey, Nuevo Leon (1229.)

Jatropha Berlandieri, Torr. At Laredo, Texas (1231).

Jatropha spathulata, Muell. Arg., var. sessiliflora, Muell. At the same locality (1234), and at San Luis Potosi (Schaffner); 830 Parry & Palmer. The leaves on the more vigorous shoots are usually deeply 3-lobed, as in the typical form. Dr. Gregg gives the

popular name "Sangre de Drago" or "Sangregrada"; according to Schaffner it is known as "Sanope Drau." The root is said to be used as a remedy for diarrhœa and dysentery.

Croton fruticulosus, Torr. At Uvalde, Texas (1235).

Croton Torreyanus, Muell. Arg., var., with the leaves mostly blunt and mucronulate at the apex. At Monclova, Coahuila (1236). 201 Gregg and 640 Wright are the same.

Croton maritimus, Walt. At Corpus Christi, Texas (1237).

Croton capitatus, Michx., var. Lindheimeri, Muell. Arg. At Laredo, on the Rio Grande (1238).

Croton Palmeri. Annual, with the habit of *C. glandulosus*, a foot high or more, repeatedly dichotomous, stellately pubescent and roughish: leaves without glands or stipules, lanceolate, acute, roundish or subcuneate at base, entire, ½ to 1½ inches long, on slender petioles: flowers clustered, male and female together, in the axils, shortly pedicelled: calyx-lobes 5, in the female flowers oblanceolate, but slightly unequal, becoming 2 or 3 lines long: stamens 8: styles 2-parted, the filiform lobes pubescent: capsule depressed-globose, equalling the calyx, pubescent: seeds finely rugulose, 1½ lines long. — At Soledad, Coahuila (1239).

Croton gracilis, Muell. Arg. At Monterey, Nuevo Leon (1240), and at San Luis Potosi (871 Schaffner); 828 Parry & Palmer. Known as "Yerba del Zorillo."

Croton Lindheimerianus, Scheele in Linnæa, 25. 580, not Muell. Arg. (*C. ellipticus*, Muell. Arg. in DC. Prodr. 15². 688, not Nutt. *C. eutrigynus*, Gray, Manual.) At Laredo, Texas (1241).

Croton Texensis, Muell. Arg. (*C. virens*, Muell. Arg.) At Bluffton, Texas (1242).

Croton monanthogynus, Michx. (*C. ellipticus*, Nutt.) At San Antonio, Texas (1243).

Croton glandulosus, Linn., var. Lindheimeri, Muell. Arg. At Sutherland Springs, Texas (1244). Also var. septentrionalis, Muell., at Lamar, on Copano Bay, Texas (2056).

Croton corymbulosus, Engelm. (*C. Lindheimerianus*, Muell. Arg. in DC. Prodr. 15². 579, not Scheele.) At Soledad (1245).

Croton morifolius, Willd., var. sphærocarpus, Muell. Arg. At Guanajuato and Penjamo (Dugès); 829 Parry & Palmer. Known as "Palillo."

Croton ——? Low and shrubby, with roughish stellate pubescence, close and subtomentose on the young leaves and branches: leaves ovate to oblong-ovate, obtuse, subcordate at base, becoming

rigid and rough above, more densely pubescent beneath, ½ to 1½ inches long; petioles 2 to 4 lines long; glands none and stipules obsolete: racemes short (6 to 10 lines), the pistillate flowers few and solitary at the base: stamens 15: petals villous at base: pistillate calyx a line long: styles once parted: capsule densely stellate-pubescent, nearly 4 lines long, the smooth seeds nearly 3 lines long. — Of the *Eucroton* section and allied to the last species, apparently undescribed. In the San Miguelito Mountains, San Luis Potosi (872 Schaffner).

Argythamnia humilis, Muell. Arg. At San Antonio (1248), Laredo (1247), and Corpus Christi, Texas (1230).

Argythamnia Neo-Mexicana, Muell. Arg. At Monclova (1246), and San Lorenzo de Laguna, Coahuila (1250).

Argythamnia mercurialina, Muell. Arg. (?) The petals of the male flowers ovate with a broad short claw, acute, somewhat undulate, the glands wanting or wholly adnate to the thick stamineal column: petals of the female flowers obsolete and glands very small; fruiting calyx-lobes only 1½ lines long: pubescence scanty, appressed. — At Sutherland Springs, Texas (1249).

Bernardia myricæfolia, Watson. At Monclova, Coahuila (322, 1232).

Bernardia (?) fasciculata. A much-branched leafy shrub, 5 feet high or more, apparently diœcious, the young branches canescent with a short close silky pubescence: leaves in numerous sessile fascicles, or alternate on young shoots, rather thick, spatulate or oblanceolate, 2 to 4 lines long, glabrous or nearly so, entire: male flowers fascicled, on slender pedicels about a line long, glabrous; sepals 5; stamens 3 to 5, free, surrounding a fleshy disk or rudimentary ovary, the short-oblong terete anther-cells attached near the top: female flowers very nearly sessile; calyx very small: ovary appressed-silky; stigmas thick, obscurely lobed: capsule sessile or nearly so, puberulent, subglobose with a deep depression at base, not deeply lobed, and cocci 2-valved, 3 or 4 lines long: seeds flattened-obovate, smooth, with a prominent caruncle partially covered by the raised testa. — An anomalous species of doubtful position, only provisionally referred to *Bernardia*. It appears to be allied to *Bernardia* and, perhaps more nearly, to *Adelia*, but differs essentially from both. In the mountains northeast of Monclova, Coahuila (1233); collected also by Gregg on the plains southwest of San Pablo, in April, 1847, — staminate specimens only, — and by Thurber (837), at Saucillo, Chihuahua, in fruit. Palmer's specimens, collected in September, are in fruit and with pistillate flowers in some of the leaf-fascicles.

Acalypha phleoides, Cav. At Saltillo (1251), and in the San Miguelito Mountains, San Luis Potosi (33 Schaffner).

Acalypha Lindheimeri, Muell. Arg. At Monclova, Coahuila; 826 and 826½ Parry & Palmer, referred to the last species.

Acalypha radians, Torr. West of San Antonio, Texas (1253).

Acalypha anemioides, HBK. At San Luis Potosi (31 Schaffner); 825 Parry & Palmer.

Acalypha Neo-Mexicana, Muell. Arg. At San Luis Potosi (32 Schaffner); 737 Parry & Palmer, referred to *A. Virginica*, which probably does not occur in Mexico.

Acalypha vagans, Cav., var. glandulosa, Muell. Arg. At San Luis Potosi (34 Schaffner). Quite variable. Probably the same as the plant thus referred by Mueller, but apparently as distinct from Cavanilles' species as several of the species of this group in the Prodromus.

Tragia nepetæfolia, Cav. At Monterey, Nuevo Leon. — Also a variety with only sinuate leaves, rarely toothed toward the base, with a deep sinus and rounded basal lobes; at Laredo, on the Rio Grande (1254). — Also var. (?) angustifolia, Muell. Arg.; at Sutherland Springs, Texas (2057). The narrow leaves are nearly sessile (as in Berlandier's specimen).

Tragia urticæfolia, Michx. At Guanajuato (Dugès), where it is known as "Ortiguilla"; 827 Parry & Palmer, referred to *A. stylaris*. It is not easy to clearly separate this species (from which *A. macrocarpa*, Willd., is certainly distinct) from the last.

Stillingia sanguinolenta, Muell. Arg., var. angustifolia, Muell. At Guajuco, Nuevo Leon (1255); referred by Hemsley to *S. sylvatica*. With staminate flowers only, and many of the leaves alternate.

Stillingia angustifolia, Engelm. in herb. (*S. sylvatica*, vars. *angustifolia* and *linearifolia*, Muell. Arg.) Distinguished from *S. sylvatica* by the narrowly linear very acute leaves, the somewhat smaller capsule with flatter gynobase, and the quite smooth seed. — At Sutherland Springs, Texas (1256).

Stillingia Torreyana, Watson. Apparently perennial. It is nearly certain that *Sebastiana Treculiana*, Muell. Arg., is not distinct. At Eagle Pass, Texas (1257), and at Monterey, Nuevo Leon (1258).

Callitriche Austini, Engelm. Near Morales, San Luis Potosi (123ª Schaffner, in part).

Callitriche heterophylla, Pursh. With the last, and under the same number.

CALLITRICHE VERNA, Linn. Same locality (123[b] Schaffner).

ULMUS CRASSIFOLIA, Nutt. At San Antonio, Texas (1259).

CELTIS RETICULATA, Torr. At Uvalde, Texas (1260). A form with small entire leaves (1 to 1½ inches long), less hispid than usual.

CELTIS BERLANDIERI, Klotzsch. At Monterey, Nuevo Leon (1261). Not clearly distinguished from *C. Mississippiensis*, Bosc.

CELTIS PALLIDA, Torr. Referred by Planchon to *C. Tala*, Gill., from which it differs in at least the fine cinereous pubescence and the rough and blunter (usually obtuse) leaves. At Laredo, Texas (159).

CANNABIS SATIVA, Linn. At Guanajuato (Dugès); known as "Marihuana."

URTICA SPIREALIS, Blume, var. (?) Near *U. Magellanica*, Poir., but with smaller stipules (linear, 2 lines long), and with smaller and less crowded flowers and fruit. At Guajuco, Nuevo Leon (1262).

URTICA URENS, Linn. At Corpus Christi, Texas (1264); 833 Parry & Palmer.

URTICA CHAMÆDRYOIDES, Pursh. At Monterey (1265).

BŒHMERIA CYLINDRICA, Willd. At San Antonio, Texas (1263).

PARIETARIA OFFICINALIS, Linn. (?) Referred to this species at Kew, but perhaps distinct. At Guajuco, Nuevo Leon (1266).

PARIETARIA FLORIDANA, Nutt. Considered by Weddell as a variety, first of *P. debilis*, and afterwards of *P. Pennsylvanica;* probably distinct from both. In the mountains east of Saltillo (1267), and in the San Miguelito Mountains, San Luis Potosi (39 Schaffner); 832 Parry & Palmer.

PLATANUS MEXICANA, Moric. Distinguished from *P. racemosa* by the shorter and broader lobes of the leaves (densely white-tomentose beneath), and by the larger fruit with the akenes tomentose to the summit. At Monterey, Nuevo Leon (1268); 834 Parry & Palmer.

PLATANUS LINDENIANA, Mart. & Gal. Differing from the last in the more ferruginous and less persistent tomentum, and in the long-acuminate leaf-lobes. At Monclova, Coahuila (1269); referred to *P. racemosa.*

CARYA OLIVÆFORMIS, Nutt. At Georgetown, Texas (1271, 1272, 1273, 2005); 835½ Parry & Palmer (the same number is cited by Hemsley under *C. Mexicana*, which should be 834½).

JUGLANS RUPESTRIS, Engelm. At Uvalde, Texas (1270).

JUGLANS NIGRA, Linn. At Georgetown, Texas (2002).

QUERCUS VIRENS, Ait. At Sutherland Springs (1274), Laredo (1276), Uvalde (1279), and Georgetown, Texas (1280, 2004), and at some locality in Mexico (2003).

Quercus Durandi, Buckley. At Sutherland Springs (1275).

Quercus stellata, Willd. At Georgetown, Texas (1281).

Quercus nigra, Linn. Same locality (1282).

Quercus coccinea, Wang. At Sutherland Springs (1283), and Georgetown, Texas (1284).

Quercus macrocarpa, Michx. At Georgetown, Texas (1285).

Quercus grisea, Liebm. In the Sierra Madre, south of Saltillo (1278), — a small tree, twenty feet high and rarely over a foot in diameter.

Quercus castanea, Nee (?), — foliage only. At Guanajuato (Dugès); 839 Parry & Palmer, a variety.

Quercus ——? Resembling forms of *Q. castanea*, but with thinner acuminate leaves, sparingly stellate-tomentose, the slender pedicel and the thin turbinate-campanulate cup hoary-tomentose. In the Sierra Madre, south of Saltillo (1277). "Red Oak"; often thirty or forty feet high.

Quercus crassifolia, Humb. & Bonpl. In the San Miguelito Mountains, San Luis Potosi (897 Schaffner); 836 Parry & Palmer.

Quercus reticulata, Humb. & Bonpl. (?), — foliage only. Mountains near San Luis Potosi (896, 898 Schaffner), and at Guanajuato (Dugès). Some of the leaves are over a foot long and 8 inches wide.

Quercus tomentosa, Willd. (?), — foliage only. Mountains near San Luis Potosi (899 Schaffner).

Quercus confertifolia, Humb. & Bonpl. In the Santa Rosa Mountains, Guanajuato (Dugès).

Salix Bonplandiana, HBK. In the mountains east of Saltillo (1286), and about San Luis Potosi (895 Schaffner).

Salix taxifolia, HBK. At Morales, San Luis Potosi (893 Schaffner); 840 Parry & Palmer.

Salix ——? In the San Miguelito Mountains, San Luis Potosi (894 Schaffner). A well-marked and apparently very distinct species. Hoary-tomentose, the leaves glabrate above, narrowly lanceolate, acute, cuneate at base, irregularly and rather bluntly serrulate, 2 to 4 inches long; petioles 2 to 4 lines long: pistillate aments appearing after the leaves, sessile, dense, very short (6 lines long or less); bracts very densely villous: ovary glabrous or nearly so.

Populus alba, Linn.; a variety with ovate-orbicular or subreniform-ovate leaves, sparingly sinnate or entire. At San Luis Potosi, in cultivated grounds (892 Schaffner); 842½ Parry & Palmer. 842 Parry & Palmer is *P. nigra*, Linn.

Populus Fremonti, Watson, var. (?) Wislizeni, Watson. In cultivated places about San Luis Potosi (891 Schaffner); 843 Parry & Palmer. One of the several forms that are provisionally referred to this species.

Ceratophyllum demersum, Linn. At San Lorenzo de Laguna, Coahuila (1287).

Ephedra pedunculata, Engelm. Ms. A strongly marked and very distinct species, the slender elongated stems 6 to 10 feet long and climbing over surrounding bushes: leaves and fruit-scales in pairs, the latter more or less connate and becoming at length fleshy and forming a red edible pedunculate fruit: seed in pairs: anthers 5 to 7, stipitate. — At Uvalde, Texas (1291), at Saltillo (1289) and Juraz, Coahuila (1290), and at San Luis Potosi (Schaffner); 855 Parry & Palmer.

Ephedra antisyphilitica, Meyer. At Sutherland Springs, Texas (1292). This species has been variously confused with the last and with *E. Nevadensis*, owing to the very imperfect state of Berlandier's original specimens and the difficulty of finding characters by which to identify them. An examination of the single spike (staminate) on his specimens in the Gray herbarium shows satisfactorily that they are distinct from *E. pedunculata*, while the locality in which they were found (McMullen County, Texas) makes it certain that they cannot be the same as *E. Nevadensis*, which is not known to occur either in Texas or New Mexico. The common species of Western Texas, with which it may be considered as identical, is a rather stout and rigid bush, with opposite leaves and scales, the latter more or less connate but becoming less fleshy than in the last, and the spike more shortly pedunculate or subsessile: seed solitary: anthers 4 or 5, sessile.

Ephedra aspera, Engelm. Ms. Distinguished from the last by the very rough branches, the fruit-scales all distinct and probably not becoming fleshy, and the seed in pairs. — In the Sierra Madre, south of Saltillo, Coahuila (1288). Collected also by Gregg (53) west of Cartamullo.

Cupressus Arizonica, Greene. In the Sierra Madre, south of Saltillo (1293). 848 Parry & Palmer appears to be the same, but with more prominent and curved bosses upon the cones, as in *C. Benthami*, from which it differs only in its more glaucous foliage. It is doubtful whether the two species are distinct.

Cupressus Benthami, Endl. Staminate specimens from the same region (1294), referred by Hemsley to *Juniperus flaccida*, but agreeing in every respect with this species.

Juniperus flaccida, Schlecht. From the same region (1295, referred to *J. tetragona*), and in the San Miguelito Mountains, San Luis Potosi (905 Schaffner); 853 Parry & Palmer.

Juniperus Mexicana, Schiede (as determined by Engelmann). In the Sierra Madre, south of Saltillo (1296).

Juniperus occidentalis, Hook., var. conjungens, Engelm. At Georgetown, Texas (1297).

Taxodium distichum, Rich. At Uvalde, Texas (1298).

Taxodium mucronatum, Ten. At Santa Ana Pacueco, Guanajuato (Dugès).

Pinus latisquama, Engelm. in Gard. Chron. 2. 18. 712, fig. 125. Bark reddish brown, scaly, ½ inch thick or less, on the younger branches smooth and thin; branchlets very slender: leaves in threes, very slender, 2 to 4 inches long, entire, with short triangular bracts and close thin caducous sheaths (3 lines long): cones peduncled and subterminal, subcylindrical-ovate, about 3 inches long; scales chestnut-brown and shining, obliquely rhombic, transversely carinate, with depressed umbo and a short stout closely inflexed prickle, the middle scales 8 to 12 lines broad, the lower becoming strongly tuberculate and reflexed: seeds wingless, 6 to 8 lines long. — Dr. Engelmann's description and figure of the foliage appear to have been, through some mistake in the specimens sent to him, from that of the next species. In the Sierra Madre, south of Saltillo (1299), seen only in a single locality, on each side of a long mountain pass. Not very tall, with numerous rather slender branches.

Pinus Ayacahuite, Ehrenb. (*P. strobiformis*, Engelm. in Wisliz. Rep. 102.) From the same region; a large tree; wood soft and easily worked. "White Pine"; "Acanita."

Pinus cembroides, Zucc. From the same region, and from the mountains east of Saltillo, the dwarf pine or piñon of the cañons; 846 Parry & Palmer.

Pinus Montezumæ, Lamb. From the Caracol Mountains, southeast of Monclova, Coahuila.

Pinus Teocote, Cham. & Schlecht. (?) In the Sierra Madre, south of Saltillo; 844, 844½ Parry & Palmer. "Pino real"; "Red Pine." A tall, large, and straight tree, with very firm and compact bark, the timber solid and very durable.

Abies religiosa, Schlecht. In the same region. "Huallame." Fine timber for carpenters' uses.

Pseudotsuga Douglasii, Engelm. From the same region; known as "Hallarin."

Microstylis fastigiata, Reichenb. f. (?) Sepals and petals thin: lip broadly ovate and somewhat auricled, shortly acuminate, deeply concave and with a shallow pit on each side of the thickened midvein. — In the Caracol Mountains, Coahuila (1300). The same as 914 Ghiesbreght.

Microstylis montana, Rothr. In the San Miguelito Mountains, San Luis Potosi (517 Schaffner); 858 Parry & Palmer. This may be the same as *Malaxis elliptica*, Rich. & Gal.

Hexalectris aphylla, Raf. (*Bletia aphylla*, Nutt.) In the Sierra Madre, south of Saltillo (2006), and in the San Miguelito Mountains (316 Schaffner); 861 Parry & Palmer.

Bletia campanulata, Llave (?). In the San Miguelito Mountains (518 Schaffner), and at Guanajuato (Dugès). The same as 905 Ghiesbreght.

Cranichis Schaffneri, Reichenb. f. In the San Miguelito Mountains (507 Schaffner).

Spiranthes cinnabarina, Benth. & Hook. (*Stenorhynchus cinnabarinus*, Lindl.) In the Caracol Mountains, Coahuila (Palmer), and at Guanajuato (Dugès).

Spiranthes aurantiaca, Benth. & Hook. (*Stenorhynchus aurantiacus*, Lindl.) At Guanajuato (Dugès).

Spiranthes ——? In the San Miguelito Mountains (511 Schaffner.)

Spiranthes ——? In the Morales Mountains, San Luis Potosi (512 Schaffner).

Spiranthes ——? In the Alvarez Mountains, San Luis Potosi (513 Schaffner).

Spiranthes ——? In the Hoorez Mountains, San Luis Potosi (514 Schaffner); 857 Parry & Palmer. All these are well-marked and, so far as appears, undescribed species.

Habenaria volcanica (?) (*Platanthera volcanica*, Lindl.) In the Sierra Madre, south of Saltillo (Palmer).

Habenaria ——? In the San Miguelito Mountains (508 Schaffner); 860 Parry & Palmer.

Cypripedium molle, Lindl. At Guanajuato (Dugès).

Hechtia glomerata, Zucc. Near Morales, San Luis Potosi (501 Schaffner); 877 Parry & Palmer. The staminate inflorescence is branched and less pubescent than the fertile.

Tillandsia recurvata, Linn. At San Luis Potosi, growing upon cactus (530 Schaffner), and at Guanajuato (Dugès); 872½ Parry & Palmer. Dugès gives the popular names "Heno" and "Pastle."

Iris Missouriensis, Nutt. At Lerios, in the high mountains east of Saltillo (1302).

Iris Florentina, Linn. In the same region (2009). Unlike any native North American species, and probably cultivated.

Tigridia VanHouttei, Roezl. At Guanajuato (Dugès). Known as "Jalmique"; bulbs eatable, with the taste of chestnuts. The same as 79 and 628 Ghiesbreght.

Nemastylis tenuis, Benth. & Hook. (*Chlamydostylis tenuis*, Baker.) At Guajuco, Nuevo Leon (2008). Flowers indigo-blue.

Nemastylis multiflora, Benth. & Hook. (*Chlamydostylis multiflorus*, Baker.) At Morales, San Luis Potosi (538 Schaffner); Parry & Palmer, without number. This is probably Baker's species in part. The flowers are larger than described by him, the perianth being 12 to 14 lines long, and the column of filaments nearly half an inch long. The capsules are oblong, 8 lines long; seeds obliquely oblong-ovate, finely tuberculate; connective as broad as the anther-cells.

Nemastylis nana. Bulb small, with dark brown coats: leaves very narrow, 3 to 6 inches long: scape an inch or two long, bearing a single elongated leaf and one or two peduncles; spathes 9 lines long, the outer valve shorter and acuminate, the inner acute and closely convolute, 1-flowered; pedicel included: perianth greenish white, the nearly equal segments 4 to 7 lines long: staminal tube a line long, the anthers with very narrow connective, 3 lines long: styles half as long, very slender, ascending: capsule oblong-ovate, 3 lines long. — In the Escabrillos Mountains, San Luis Potosi (539 Schaffner); 887 Parry & Palmer.

Sisyrinchium tenuifolium, Humb. & Bonpl. At Lerios, Coahuila (1301), and near Morales, San Luis Potosi (528 Schaffner); 878 and 880 Parry & Palmer, and 523 and 2664 Bourgeau. It is the same also as 231 Hartweg, which is probably the type of *S. Hartwegi*, Baker, of which the name only appears to have been published, without description or other means of identification.

Sisyrinchium scabrum, Cham. & Schlecht. At Lerios, Coahuila (2007), near Morales (529 Schaffner), and at Guanajuato (Dugès). Differing little, except in its scabrous margins, from *S. anceps*, Cav., which also occurs in Mexico (Gregg; 222 Hartweg; 879 and 879½ Parry & Palmer).

Sisyrinchium Schaffneri. Root of slender fibres: scape simple, 1 to 4 inches high, equalling or exceeding the rather broad leaves (½ to over 1 line wide); margins distantly serrulate: spathe 2–6-flowered,

the inner valve about 6 lines long, the outer usually longer: flowers yellow, the acute segments 3 lines long: capsule oblong-obovate, more or less narrowed at base, 2 or 3 lines long. — At San Luis Potosi (527 Schaffner); 881 Parry & Palmer.

Hypoxis decumbens, Linn. At San Luis Potosi (545 Schaffner); 871 Parry & Palmer. Collected by Mr. Lemmon in the Huachuca Mountains, Arizona.

Cooperia Drummondii, Herb. At Laredo, Texas (1304).

Zephyranthes Texana, Herb. (*Hippeastrum Texanum*, Baker.) At San Antonio, Texas (1305).

Zephyranthes concolor, Benth. & Hook. (*Hippeastrum concolor*, Baker.) At Morales, San Luis Potosi (540[b] Schaffner); 868 Parry & Palmer.

Zephyranthes pallida, Roem. At San Luis Potosi (541 Schaffner); 869 Parry & Palmer.

Zephyranthes carinata, Herb. At Guanajuato (Dugès). Known as "Mayo."

Zephyranthes aurea. Distinguished from *Z. Texana* by the shorter and stouter peduncle (rarely over ½ inch long), the yellow perianth of the same color outside or usually greenish, the capsule much larger (6 lines long), and the larger seeds (3 lines long). — From Texas to Arizona and Mexico. At Laredo, on the Rio Grande (1303), and at San Luis Potosi (540 Schaffner); 870 Parry & Palmer. Collected also at Fort Davis, Texas, by Dr. J. B. Girard; in New Mexico by Wright (1904), and near Silver City by E. L. Greene; in Arizona, near Fort Huachuca, by J. G. Lemmon; and in Mexico by Gregg (491).

Bomaria acutifolia, Herb. At Guanajuato (Dugès).

Bravoa geminiflora, Llav. & Lex. Same locality (Dugès).

Beschorneria tubiflora, Kunth. In the Morales Mountains, San Luis Potosi (504 Schaffner); 866 Parry & Palmer.

Agave maculosa, Hook. At Guadalupe, Texas (1306).

Agave guttata, Jac. & Bouchè. In the Morales Mountains (505 Schaffner); 865 Parry & Palmer. The specimens accord with the description given by Baker (Gard. Chron. 2. 8. 808), except that the leaves are distinctly serrulate and the flowers smaller (less than an inch long, the filaments an inch long). Known as "Lechuguilla."

Agave variegata, Jacobi. In the San Miguelito Mountains (506 Schaffner). Filaments (about 15 lines long) scarcely more than half as long as described and figured, and the leaves even more distinctly serrulate than in the last. Also known as "Lechuguilla."

Agave revoluta, Klotzsch (?) At Saltillo, Coahuila (1307). Much resembling the last, but the leaves more undulate and not at all serrulate, and the tube of the perianth somewhat longer and narrower.

Agave asperrima, Jacobi. Acaulescent: leaves few, narrowly oblanceolate and long-acuminate, 2 feet long by 3 or 4 inches wide, channelled, glaucous and rough, terminating in a slightly decurrent brown slender spine 1½ to 3 inches long, and with broad brown spines upon the fleshy margin, 4 to 8 lines long, reflexed and often variously curved: flowers numerous, paniculed; ovary linear, 9 lines long; perianth-tube 6 lines long, with the stamens inserted on the middle; segments 10 lines long: filaments about 2 inches long: capsule sessile, oblong, 1½ to 2 inches long: seeds smooth, 3 lines long. — At San Lorenzo de Laguna, Coahuila (1309), and in cultivation at Cambridge. Of the *A. Americana* group, and remarkable for its rough glaucous leaves and very long spines. The species has been referred by Baker to *A. Salmiana*, but proves to be very distinct. Seeds have been distributed by Dr. Engelmann under the name *A. longispina*.

Agave Wislizeni, Engelm. In the Caracol Mountains, southeast of Monclova, Coahuila (1310).

Agave Americana, Linn. At Monclova, Coahuila (1313).

Agave ——— (?) Flowers only, in a large panicle: ovary an inch long or more: perianth 18 lines long above the ovary, very fleshy, the broad tube about 4 lines long, and the very stout filaments (3 inches long) adnate over two thirds of its length. — At Saltillo (1308).

Agave falcata, Engelm. Leaves numerous, a foot long, very rigid, falcate, sharply serrulate, the terminal spine 1 to 1½ inches long: flowering stem 5 feet high; flowers as described: capsule 6 lines long, deeply channelled on the sides, coarsely striate, tardily dehiscent: seeds 1½ to 2 lines long. — At Parras, Coahuila (1314).

Agave bracteosa, Watson; Engelm. in Gard. Chron. 2. 18. 776, figs. 138, 139. Acaulescent, with narrow fleshy minutely serrulate leaves, 1½ to 2 feet long, attenuate from near the base to an herbaceous tip: flowering stem 3 feet high, covered with numerous recurved subulate-filiform bracts, 4 to 6 inches long or more: flowers in pairs in a very dense spike, subtended by short membranous bracts; ovary and perianth each 6 lines long, the latter divided very nearly to the base: filaments 2 inches long: capsules oblong, 6 lines long. — On mountain cliffs fifteen miles from Monterey, Nuevo Leon (Palmer); in cultivation at Cambridge.

AGAVE VICTORIÆ-REGINÆ, Moore. On gravel-banks in the same locality (Palmer), and in cultivation at Cambridge, where it has flowered (Gard. Chron. 2. 18. 841, fig. 149). Flowering stalk over 10 feet high, the flowers by threes in a very dense spike: perianth 9 lines long, exceeding the ovary: filaments 15 lines long, inserted on the middle of the very short tube.

DIOSCOREA ——? At Guanajuato (Dugès). A staminate specimen, with small hexandrous flowers in simple short-pedunculate racemes shorter than the cordate acuminate leaves: finely pubescent. Known as "Camote del Cerro."

DIOSCOREA ——? At Guanajuato (Dugès). Staminate specimens of a very delicate slender glabrous species, with minute greenish 3-androus flowers in short simple racemes rather exceeding the small cuspidate oblong-cordate leaves.

SMILAX BONA-NOX, Linn. (*S. tamnoides*, Gray, Manual.) A form with auriculate-lanceolate acuminate leaves, subcordate at base, 3–5-nerved. Collected by Schaffner, but the ticket lost.

YUCCA ANGUSTIFOLIA, Pursh, var. MOLLIS, Engelm.; with the narrow (2½ to 4 lines wide) and rather rigid pungent leaves of var. *elata*. At Uvalde, Texas (1312).

YUCCA RUPICOLA, Scheele, var. RIGIDA, Engelm. At Monclova, Coahuila. Flowering stem 8 to 10 feet high; leaves 15 to 18 inches long by 4 or 5 lines broad, scarcely pungent: capsules 2 to 2½ inches long, acuminate, the valves not splitting at the apex: seeds 3 lines broad. Known as "Amole."

NOLINA LINDHEIMERIANA, Watson. At Sutherland Springs (1316).

NOLINA HUMILIS, Watson. Near San Miguelito, San Luis Potosi (502 Schaffner); 875 Parry & Palmer. Palmer also collected in the Sierra Madre, south of Saltillo, a staminate specimen with the flowering stem and inflorescence (a foot high) coarsely rough-pubescent, the bracts narrower at base, longer and more attenuate, and the leaves more or less rough on the back. This may be the same as 874 Parry & Palmer (the specimen in the Gray herbarium insufficient for determination), which Mr. Baker has separated under the name *Beaucarnea Watsoni*.

DASYLIRION GLAUCOPHYLLUM, Hook. (?) A fruiting specimen not positively referable to any of the described species. Leaves 4 feet long, somewhat glaucous at base, the margins between the teeth only very minutely serrulate, and the thin extremity not splitting into threads but dying and breaking off; base 2½ inches wide: flowering stem 10 feet high, the numerous crowded erect panicles shorter than

the broad conspicuous bracts (mostly 3 inches long): fruit closely resembling that of *D. Wheeleri*. — At Monclova, Coahuila.

Dasylirion acrotrichum, Zucc. At San Luis Potosi (500 Schaffner); 876 Parry & Palmer. Referred by me (Proc. Amer. Acad. 14. 219) to *D. graminifolium*, Zucc., but Mr. Baker is probably more correct in considering it a form of *D. acrotrichum*. Known as "Cucharilla."

Anthericum stenocarpum, Baker. (*Hesperanthes stenocarpa*, Watson.) At Lerios, Coahuila (2012).

Anthericum leptophyllum, Baker. (*Hesperanthes leptophylla*, Watson.) In the San Miguelito Mountains, San Luis Potosi (543 Schaffner); 890 Parry & Palmer, in part. Mr. Bentham's judgment is yielded to in retaining these species in *Anthericum*.

Echeandia terniflora, Ort. At Guanajuato (Dugès); 890 Parry & Palmer, in part.

Glyphosperma* Palmeri. Glabrous: stem 1 or 2 feet high, usually sparingly branched, leaves membranously sheathing at base, 6 to 10 inches long, racemes loose; pedicels erect, 2 or 3 lines long: perianth-segments oblong, obtuse, 4 or 5 lines long, with a broad brown midnerve: outer filaments a half shorter than the inner and with a somewhat more dilated base: stigmas salmon-colored: capsule 2 lines long: seeds with 3 or 4 furrows on the back and usually 3 pits on each side. — In sandy valleys at Saltillo, Coahuila (1320), and in cultivation at Cambridge.

Hemiphylacus* latifolius. Tuberous roots dilated downward, 6 inches long or more; caudex covered with the fibro-membranous bases of old leaves: leaves thin, nearly a foot long, 8 to 12 lines broad: stem sparingly branched, 2 feet high: racemes elongated,

* The following new genera are proposed. The first, belonging to Bentham's subtribe *Anthericeæ*, is remarkable for the large colored stigmas, the peculiar filaments, the short dorsifixed anthers, the 1-nerved perianth-segments, the pitted rugose seeds, and the terete fistulous leaves. The second, intermediate between the *Chlorogaleæ* and the *Anthericeæ*, is characterized especially by the adnate filaments, only the inner and shorter ones antheriferous, and the scarious 1-nerved perianth-segments, in connection with the tuberous roots.

GLYPHOSPERMA. Perianth-segments distinct, spreading, 1-nerved, at length connivent and soon deciduous, not twisted. Stamens 6, shorter than the perianth, upon its base; filaments clavate above a dilated pubescent base, the inner three longest; anthers versatile, short-oblong, introrse. Ovary sessile, globose; style shorter than the stamens, deciduous; stigmas 3, obovate, colored; ovules 2 in each cell, pendulous. Capsule thin-coriaceous, obovate, subtriquetrous, 3-celled, loculicidal. Seeds 1 or 2 in each cell, triquetrous, dark ash-color, strongly rugose across the back, pitted on the sides; embryo in fleshy albumen,

secund; pedicels solitary, 2 to 4 lines long, about equalling the lanceolate acuminate bracts, at length spreading or recurved: perianth-segments lanceolate, 4 lines long, the midnerve not colored: sterile filaments scarcely shorter than the perianth, all adnate to its middle: style a line long, at length declinate: capsule very shortly stipitate, 2 to 3 lines long and broad. — In the mountains six miles east of Saltillo, Coahuila (1319).

Milla biflora, Cav. At San Luis Potosi (Schaffner); 884 Parry & Palmer.

Nothoscordum striatum, Kunth. At Guadalupe, Texas (2009), at Lerios (1317) and Monclova, Coahuila, at Guajuco, Nuevo Leon (1318), and at San Luis Potosi (537[a] Schaffner); 886 Parry & Palmer.

Allium scaposum, Benth. In the San Miguelito Mountains, San Luis Potosi (537[b] Schaffner), and at Guanajuato (Dugès); 885 Parry & Palmer, at least in part. It is doubtful if *A. glandulosum*, Link & Otto, be not the same with deeper colored flowers, as represented by 885 Parry & Palmer, in part, and 1567 Coulter. Specimens collected by Dr. Palmer at Soledad, Coahuila (2010), are perhaps a stout form of *A. scaposum*, with more numerous and shorter pedicels (6 lines long), and light pink flowers. *A. longifolium*, Spreng. (*Schœnoprasum longifolium*, HBK.), is probably *Nothoscordum striatum*.

Calochortus flavus, Schult. f. In the San Miguelito Mountains (542 Schaffner), and at Guanajuato (Dugès); 891 Parry & Palmer.

Zygadenus volcanicus, Benth. In the San Miguelito Mountains (544 Schaffner); 892 Parry & Palmer.

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nearly as long, slightly curved. — Root fleshy-fibrous. Leaves radical, terete or slightly concave on the inner side, fistulous. Stem branching, leafless, with scarious bracts at the nodes. Inflorescence racemose, the pedicels solitary, jointed in the middle. Flowers small, light salmon-color.

HEMIPHYLACUS. Perianth persistent, the distinct equal spreading 1-nerved segments at length lax and scarious. Stamens perigynous, included; filaments slender, naked, unequal, adnate to the middle, those upon the outer segments longest and without anthers; anthers versatile, rounded, introrse. Ovary nearly sessile, 3-celled, 3-lobed: style slender, persistent; stigmas minute: ovules 3 to 6 in each cell, upon the middle of the axis. Capsule coriaceous, broadly triquetrous-ovate, loculicidal. Seeds 1 or 2 in each cell, black. Embryo slightly curved, in fleshy albumen. — A glabrous perennial, with long tuberous fascicled roots. Leaves radical, very broadly linear. Stem naked, branched above, with scarious bracts. Flowers small, in loose racemes, white or yellowish; pedicels jointed at the summit.

Zygadenus porrifolius, Greene. In the Sierra Madre, south of Saltillo (1321).

Schenocaulon Drummondii, Gray. At Sutherland Springs, Texas (1322), and in the San Miguelito Mountains (536 Schaffner), where it is known as "Matu Curros"; 882 Parry & Palmer; 1570 Coulter. The Mexican specimens scarcely differ from the Texan, — the stamens usually rather shorter, and capsules somewhat more obtuse at each end.

Heteranthera limosa, Vahl. At Guadalupe, Texas (1323), at Morales (519 Schaffner) and near Ladrillera, San Luis Potosi (Schaffner); 899 Parry & Palmer.

Heteranthera reniformis, Ruiz & Pavon. Near Morales (520 Schaffner), and at Guanajuato (Dugès); 898 Parry & Palmer.

Heteranthera Mexicana. Stems short, ascending from a short rooting base, somewhat glandular-pubescent above with the inflorescence: leaves linear with a dilated sheathing base, 3 or 4 inches long by 1 or 2 lines broad: spathe ovate-lanceolate, acuminate, 9 lines long: spike pedunculate above the spathe, 2 to 4 inches long, 12–15-flowered, naked, the flowers scattered, ascending: perianth-tube 3 or 4 lines long, greenish, pubescent, the limb as long, spreading, blue with white centre: one stamen nearly twice longer than the others and equalling the style: capsule oblong-ovate, 2 or 3 lines long: seeds nearly globose, 12-striate. — Closely resembling *H. Seubertiana*. At Juraz, on the Sabinas River, Coahuila (1324).

Commelina pallida, Willd. In the Sierra Madre, south of Saltillo (1326), and at Guanajuato (Dugès), where it is called "Yerba del Pollo."

Commelina Virginica, Linn. At Uvalde, Texas (2015).

Commelina graminifolia, HBK. At San Luis Potosi (526 Schaffner); 903 Parry & Palmer.

Tinantia fugax, Scheidw. At Guanajuato (Dugès).

Tradescantia Karwinskyana, Roem. & Schult. In the Sierra Madre, south of Saltillo (1325), and at San Luis Potosi (525 Schaffner); 900 Parry & Palmer.

Tradescantia crassifolia, Cav., var. (?) angustifolia. Low (a foot high or less): leaves linear to linear-lanceolate: umbels loosely few-flowered: sepals less than 3 lines long, villous or glandular-pubescent: ovary hairy only at the summit. — In the Sierra Madre, south of Saltillo (2016), and in the Morales Mountains (521 Schaffner); 253 Gregg. The typical form was collected by Schaffner (523) in the San Miguelito Mountains; 902 Parry & Palmer.

TRADESCANTIA LEIANDRA, Torr. (*Zebrina* (?) *leiandra*, C. B. Clarke in A. DC. Monogr. 3. 318.) At Soledad, Coahuila (2014). Cells 2-seeded, or the dorsal cell 1-seeded. Referred doubtfully by Clarke to *Zebrina*, but it has none of the characteristics of that genus, and in no respect differs from *Tradescantia*. 700 Wright, as found in Herb. Gray, includes not only this species, but a specimen of *Commelina Virginica*, and another of *Commelina dianthifolia* (as noted by Mr. Clarke under that species, though it is also described by him as *C. leiandra*).

TRADESCANTIA LINEARIS, Benth. In the San Miguelito Mountains (524 Schaffner); 901 Parry & Palmer, referred by Clarke to *T. venustula*, Kunth. Collected also by Dr. Edwards at Rinconada. Distinguished especially from *T. venustula* by the broader fleshy connective. 701 Wright, referred by Dr. Torrey doubtfully to *T. rosea* and by Mr. Clarke to this species, is distinct from both, — possibly a dwarf small-flowered *T. Virginica*, or glabrous *T. tuberosa*.

CALLISIA INSIGNIS, Clarke. Near Morales, San Luis Potosi (522 Schaffner).*

JUNCUS BALTICUS, Willd. At San Luis Potosi (554 Schaffner).

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* The genera and species of the order *Commelinaceæ* in the United States, studied with reference to the revision of the order by Mr. C. B. Clarke in De-Candolle's *Monographiæ*, are as follows: —

COMMELINA, Dill. Cyme sessile within a cordate or connate bract (spathe). Perfect stamens 3. Cells of the capsule 1- or 2-seeded.

* Ventral cells 2-ovuled (and usually 2-seeded), the dorsal 1-ovuled.

+ Margins of the spathe not united.

1. C. NUDIFLORA, Linn. (*C. Cayennensis*, Rich. *C. communis*, of Chapman.) Slender and creeping: leaves lanceolate: spathe cordate, acute: seeds reticulated. — From Delaware to Florida, and Missouri to Texas.

2. C. DIANTHIFOLIA, DC. (*C. linearis*, Benth. *C. leiandra*, Clarke.) Slender, erect, from a tuberous root: leaves linear: spathe cordate and long-attenuate: seeds wrinkled or pitted. — Northwestern Texas to New Mexico and Mexico.

+ + Margins of the spathe united.

3. C. HIRTELLA, Vahl. (*C. erecta*, of Gray and Chapman.) Stout, erect: leaves large, lanceolate, the sheaths brown-bearded: spathes crowded: seeds smooth. — From Pennsylvania to Florida, and Kentucky to Texas.

* * Cells 1-ovuled, 1-seeded: seeds smooth: roots fleshy, subtuberous.

4. C. ERECTA, Linn. Slender, often low: leaves linear: cells all dehiscent. — Pennsylvania to Florida.

5. C. VIRGINICA, Linn. Slender, usually tall: leaves lanceolate to linear: dorsal cell indehiscent, scabrous. — From Southern New York to Michigan and southward to Florida, the Indian Territory, and Mexico; West Indies.

JUNCUS TENUIS, Willd. At San Miguelito (555 Schaffner); 894 Parry & Palmer.

JUNCUS BUFONIUS, Linn. At San Luis Potosi (556 Schaffner); 896 Parry & Palmer.

JUNCUS NODOSUS, Linn. At San Luis Potosi (551 Schaffner).

TRADESCANTIA, Linn. Umbel-like cyme subtended by leaf-like or small and scarious bracts. Perfect stamens 6 (or 5). Cells of the capsule 2-seeded.

* Umbel terminal, sessile, subtended by two leaf-like bracts: leaves lanceolate.

1. T. MICRANTHA, Torr. Low and rooting, slender, subpubescent: leaves an inch long or less: flowers small (2 lines long): filaments all hairy. — Southwestern Texas.

2. T. LEIANDRA, Torr. Stout, rooting at base, a foot high: leaves 2 or 3 inches long, somewhat villous or nearly glabrous: sepals more or less villous, 3 or 4 lines long: filaments all naked. — Western Texas and Mexico.

* * Umbels terminal or sometimes lateral, sessile, subtended by one or two leaf-like bracts: leaves linear to narrowly lanceolate.

3. T. VIRGINICA, Linn. Very variable: roots fleshy-fibrous: bracts usually a pair: the typical form smooth or only slightly villous, more or less glaucous, often tall and slender and with linear leaves, rather rarely with one or two long lateral peduncles. From the Upper Missouri and Lake Winnipeg to New York and southward, and from Texas to Southern Utah and Arizona. — Var. VILLOSA. Similar, but often dwarf, more or less villous throughout, as well as pubescent In the Mississippi Valley and Gulf States. (Var. *Drummondii*, Clarke, is a dwarf densely pubescent form of this, not at all villous, collected by Drummond in Texas.) — Var. FLEXUOSA. (*T. flexuosa*, Raf.) Stout and dark green, with large linear-lanceolate pubescent leaves, the stem usually flexuous, and with several short lateral branches or sessile axillary heads. From Ohio to Kentucky and Georgia. The extreme forms appear very distinct, but an examination of cultivated and numerous herbarium specimens fails to show satisfactory reliable characters upon which to separate them *T. pilosa*, Lehm., is intermediate between the last and the preceding forms.

4. T. TUBEROSA, Greene. Very slender, from tuberous roots, glandular-pubescent: leaves very narrowly linear: bracts solitary: flowers smaller (sepals 2 or 3 lines long). — New Mexico and Arizona.

* * * Umbel pedunculate, subtended by small subscarious bracts: flowers small.

5. T. ROSEA, Vent. Erect from a running rootstock: leaves very narrowly linear. — Maryland to Florida.

6. T. FLORIDANA, Watson. Prostrate and rooting: leaves oblong-ovate. — Florida.

TINANTIA, Scheidw. Cyme prolonged and scorpioid, peduncular. Otherwise as *Tradescantia*.

1. T. ANOMALA, Clarke. (*Etheosanthes ciliata*, Raf. *Tradescantia anomala*, Torr.) Tall, glabrous: leaves cordate-ovate to cordate-lanceolate, the upper sessile: inflorescence shorter than the upper leaf; flowers few; sepals 6 lines long. — Louisiana and Texas.

JUNCUS ACUMINATUS, Michx. At San Luis Potosi (552, 553 Schaffner); 893 and 895 Parry & Palmer.

JUNCUS MARGINATUS, Rost. At Morales, San Luis Potosi (550 Schaffner).

JUNCUS XIPHIOIDES, Meyer. At Morales (549 Schaffner); 897 Parry & Palmer.

POTAMOGETON NATANS, Linn. A variety with oblong leaves acute at each end. At San Luis Potosi (535 Schaffner), and at Guanajuato (Dugès).

POTAMOGETON HYBRIDUS, Michx. Near Morales (534 Schaffner); 856 Parry & Palmer.

POTAMOGETON PAUCIFLORUS, Pursh. Also near Morales (533 Schaffner).

CYPERUS FLAVESCENS, Linn. At San Luis Potosi (569 Schaffner).

CYPERUS MELANOSTACHYUS, HBK. At San Luis Potosi (568 Schaffner); 904 Parry & Palmer.

CYPERUS FLAVICOMUS, Michx. At Guanajuato (Dugès); called "Tule." The same as 431 Bourgeau.

CYPERUS ARISTATUS, Rottb. Near Monclova, Coahuila (1330), and San Rafael, San Luis Potosi (563 Schaffner).

CYPERUS SCHWEINITZII, Torr., var., with blunter scales and shorter nutlets. Near Morales, San Luis Potosi (561 Schaffner); 907 Parry & Palmer. The same as 703 Wright, referred to this species by Dr. Torrey.

CYPERUS VIRENS, Michx. At San Miguelito, San Luis Potosi (562 Schaffner).

CYPERUS ——? Near *C. acuminatus*, Torr., but the tips of the scales less spreading and the nutlets oblong: contracted umbel sublateral (one involucral bract stouter and erect). At Morales, San Luis Potosi (564 Schaffner).

CYPERUS ——? Of the same group with the last. Perennial, with a single dense sessile head, or with one or more additional rays, the spikelets very numerous: scales very dark brown with green midnerve, long-acuminate: nutlet sharply triangular, nearly as broad as high. — At Pozos, San Luis Potosi (566 Schaffner); 905 Parry & Palmer.

CYPERUS DIVERGENS, HBK. In the San Rafael Mountains, San Luis Potosi (1032 Schaffner), and at Guanajuato (Dugès); 910, 911 and 911½ Parry & Palmer; 1612, 1623 Coulter. The same as 256 Hartweg, so named by Bentham. The scales at length become white and scarious.

Cyperus ——? Allied to *C. filiculmis*, Torr., and *C. leucolepis*, Boeckl. (1611 Coulter), but the spikelets in loose spikes loosely umbellate. At San Luis Potosi (560 Schaffner).

Cyperus articulatus, Linn. At Guanajuato (Dugès). Known as "Tule Chico."

Cyperus phymatodes, Muhl. At San Luis Potosi (559 Schaffner), and Guanajuato (Dugès); 908 Parry & Palmer; 254 Hartweg.

Cyperus ——? Very near *C. erythrorrhizos*, Michx., but the nutlet elliptical and a half longer. At Guanajuato (Dugès). Known as "Tule grande."

Cyperus Baldwinii, Torr. At Guadalupe (1331) and Bluffton, Texas (1332).

Cyperus uniflorus, Torr. West of San Antonio, Texas (2018).

Cyperus incompletus, Link. At Guanajuato (Dugès). Apparently according with the description.

Cyperus ovularis, Torr. West of San Antonio, Texas (2017).

Cyperus flavus, Vahl. At San Mignelito, San Luis Potosi (565 Schaffner); 909 Parry & Palmer.

Cyperus Michauxianus, Schultes. At Sutherland Springs (1333), and at Uvalde, Texas (1334), the latter a stout highly developed form, with the umbel a foot long and the involucral leaves nearly 3 feet in length.

Eleocharis capitata, R. Brown. At Sutherland Springs, Texas (1328). The same as 711 Wright, which is referred to *E. albida* in herb. Torrey.

Eleocharis palustris, R. Brown. At San Luis Potosi (576 Schaffner); 913 Parry & Palmer.

Eleocharis arenicola, Torr. Near Morales (577 Schaffner) and at Penasco, San Luis Potosi (578 Schaffner).

Eleocharis ——? Resembling *E. microcarpa*, Torr., but the greenish nutlet somewhat larger and more turgid, minutely striate longitudinally; bristles as long as the nutlet. Near Morales, San Luis Potosi (575 Schaffner, in part).

Eleocharis cancellata. Of the same group and habit as the last, the angular scapes 1 to 1½ inches high and the greenish spikes 1 to 1½ lines long: scales short, obtuse, with a narrow brown line on each side: nutlet without bristles, obovate-pyriform, white and shining, minutely cancellate, the narrow meshes of the reticulation transverse and in vertical lines: tubercle much depressed. — Near *E. Liebmanniana*, Boeck. With the last (575 Schaffner, in part); 912 Parry & Palmer.

Eleocharis acicularis, R. Brown. At San Luis Potosi (574 Schaffner); 914 Parry & Palmer.

Dichromena leucocephala, Michx. At Sutherland Springs, Texas (1329).

Fimbristylis autumnalis, Roem. & Schult. At same locality (1327).

Fimbristylis capillaris, Gray. At San Luis Potosi (557 Schaffner); 915, 916 Parry & Palmer.

Fimbristylis ——? Apparently undescribed. Culm flattened, 6 inches high or more, rough-edged above: leaves very rough on the margin, 1 or 2 lines wide: spikelets somewhat clustered in a loose compound umbel, narrow and rather few-flowered, 2 or 3 lines long; scales brown: nutlet triquetrous, white, smooth. — In the San Miguelito Mountains (558 Schaffner).

Scirpus supinus, Linn. At Penasco, San Luis Potosi (571 Schaffner).

Scirpus ——? Very near *S. riparius*, Spreng. (*S. pygmæus*, Gray), but the nutlets somewhat rugulose transversely. At San Luis Potosi (572 Schaffner).

Scirpus heterocarpus. Roots fibrous: culms and leaves filiform, 1 to 3 inches long: spikes narrow, 2 to 4 lines long, solitary and naked upon the culm, and also sessile at the base of the leaves; basal spikes few-flowered, or flowers sometimes solitary in the axils of the leaves: scales of the terminal spike lanceolate, acuminate, chestnut-colored, the lowest often elongated and bract-like, the upper ones sterile and mostly only staminate: stamens 2; bristles none: style trifid; nutlet triangular-obovate, with a short blunt beak, white, obscurely rugulose, those in the basal spikes very much larger ($\frac{1}{2}$ line long or more). — At Penasco, San Luis Potosi (573 Schaffner), and collected also at Orizaba by Botteri (778 in herb. Gray). A very curious species, remarkable for the numerous basal spikes, which seem to be a constant characteristic, the dimorphous nutlets, and the partially staminate terminal spikes.

Fuirena squarrosa, Michx. At Sutherland Springs, Texas (1335), and at Monclova, Coahuila (1336). — Also var. pumila, Torr., at San Rafael, San Luis Potosi (567 Schaffner).

Hemicarpha subsquarrosa, Nees. At San Luis Potosi (570 Schaffner).

Rhynchospora ——? Perhaps a reduced form of *R. Schaffneri*, Boeckl. In the San Rafael Mountains (548 Schaffner); 918 Parry & Palmer.

Carex Schaffneri, W. Boott; *new sp.* Rootstock creeping, branching, clothed with imbricate brown scales that become fibrous: culm about a foot high, slender, scabrous above on the sharp angles: leaves about equalling the culm, 1 line broad, attenuate to a long filiform apex, flat or conduplicate above: spike about an inch long, of 3 or more oblong sessile clusters of lanceolate androgynous spikelets, the upper clusters crowded, the lowest distinct and rarely borne on a long radical peduncle; spikelets 5 or 6 lines long, male above: bracts filiform from an ovate several-nerved green-keeled hyaline-margined clasping base, the lowest much longer than the culm and the next one or two often exceeding it: scales hyaline, pale-chestnut with a green keel, ovate, acute or roughly awn-pointed, exceeding the perigynia, which are pale brown, ovate or lanceolate, 2 lines long, tapering at base, covered with irregular yellowish somewhat scurfy tubercles, obliquely cut at the top and ending in 2 long subulate rough teeth, serrate on the green margins: stamens 3: stigmas 2, long. (*W. Boott.*) — At San Luis Potosi (546 Schaffner).

Carex ——? Very near *C. varia*, Muhl., but differing in its stoloniferous rootstock, in its large male spike (an inch long), in the staminate summits of the female spikes, and in the larger and more numerously nerved perigynium, which is much less contracted at both ends. (*W. Boott.*) — At San Luis Potosi (547 Schaffner); 917 Parry & Palmer.

Paspalum distichum, Linn. At San Luis Potosi (1071 Schaffner). Known as "Grama."

Paspalum Humboldtianum, Fluegge. At San Luis Potosi (1053 Schaffner).

Panicum leucophæum, HBK. (*P. lacunanthum*, Torr.) Collected by Palmer (1341) but the locality uncertain, and near Morales, San Luis Potosi (1064 Schaffner).

Panicum Crus-galli, Linn., var. echinatum, Doell. At Uvalde, Texas (1340).

Panicum colonum, Linn. At Morales (1038 Schaffner).

Panicum obtusum, HBK. At San Luis Potosi (1039 Schaffner); 960 Parry & Palmer.

Panicum dichotomum, Linn., var. (*P. nitidum*, Lam.) At San Luis Potosi (1036, 1037 Schaffner).

Panicum repens, Linn. (*P. arenarium*, Brot.) At San Luis Potosi (1040 Schaffner).

Panicum cæspitosum, Swartz, ex Fourn., as named at Kew. Morales, San Luis Potosi (1080 Schaffner); 962 Parry & Palmer.

PANICUM DIVARICATUM, Linn. At Guanajuato (Dugès); "Otatillo pequeño." In fruit, and usually with one or more of the glumes black.

PANICUM ——? A slender erect yellowish annual, many-stemmed, a foot or two high, with small acumiuate spikelets in loose narrow panicles. It is the same as n. 286 of Drummoud's second Texan collection, and is referred by Dr. Vasey to *P. giganteum*, Scheele, which however is probably only a form of *P. agrostoides*. — In the mouutains west of Saltillo, Coahuila (1338).

OPLISMENUS SETARIUS, Roem. & Schult. At Georgetown, Texas (1339). Common in the Southern States, and usually referred to *O. hirtellus* (*Panicum hirtellum*, Linn.).

SETARIA IMBERBIS, Roem. & Schult. At Parras, Coahuila (1363), and at San Luis Potosi (1042, and 1043 in part, Schaffner).

SETARIA GLAUCA, Beauv. At San Luis Potosi (1041 Schaffner).

SETARIA UNISETA, Fourn., as named at Kew. (*Urochloa uniseta*, Presl. *Panicum unisetum*, Trin.) At San Luis Potosi (1043 Schaffner, in part); 957 Parry & Palmer. Also a dwarf form, 1 to 3 iuches high; in the San Miguelito Mountains (1044 Schaffner).

CENCHRUS TRIBULOIDES, Linn. At Guadalupe, Texas (1342), and at San Luis Potosi (1046 Schaffner).

CENCHRUS ECHINATUS, Linn. At Monclova, Coahuila (1343).

COIX ARUNDINACEA, Lam. (?) At Saltillo (1337). Tall and stout, probably perennial: fruit globose-ovate, as broad as long. Cultivated in the Botanic Garden at Cambridge, it had reached a height of 8 or 10 feet when it was cut down by the frost.

ÆGOPOGON CENCHROIDES, Humb. & Bonpl. At San Luis Potosi (1060 Schaffner); 942 Parry & Palmer.

TRAGUS RACEMOSUS, Desf. At Soledad, Coahuila (1344), and at San Luis Potosi (1047 Schaffner); 952 Parry & Palmer.

SCHAFFNERA GRACILIS, Benth. in Hook. Icon. t. 1378. In the San Miguelito Mountains (1070 Schaffuer).

TRACHYPOGON MONTUFARI, Nees. At San Luis Potosi (1063 Schaffner); 964 Parry & Palmer.

HETEROPOGON CONTORTUS, Roem. & Schult. At Monclova, Coahuila (1346), and at Morales, San Luis Potosi (1051 Schaffner); 955 Parry & Palmer.

ANDROPOGON LAGUROIDES, DC. At Monclova, Coahuila (1347): the same as 233 and 2969 Bourgeau (so named by Fournier), and 667 Botteri. It was collected in Texas by Berlaudier (444 and 1764), and recently by Pringle in Arizona (distributed as *A. Torreyanus*).

Andropogon Virginicus, Linn. At San Luis Potosi (1049 Schaffner).

Andropogon Myosurus, Presl (?) At San Luis Potosi (1050 Schaffner).

Andropogon hirtiflorus, Kunth. Same locality (1050 Schaffner); 966 Parry & Palmer, and the same as 752 Bourgeau.

Andropogon leucopogon, Nees. Same locality (1056 Schaffner).

Aristida purpurea, Nutt., var. Berlandieri, Trin. & Rupr. At Guadalupe, Texas (1350).

Aristida bromoides, HBK. At Parras (1352, a large form), and in the mountains west of Saltillo (1351, an erect form); also at San Luis Potosi (1066 Schaffner).

Aristida divaricata, Humb. & Bonpl. At San Luis Potosi (1057 Schaffner).

Stipa viridula, Trin. At Lerios, Coahuila (1249). Dr. Palmer notes that this grass is considered poisonous to animals, having a temporary narcotic effect upon them.

Stipa Jurava, Beauv. (*S. eriostachya*, HBK., Nov. Gen. 1. 127, t. 41.) At San Luis Potosi (1054 Schaffner).

Stipa avenacea, Linn., var. (?) At San Luis Potosi (1055 Schaffner); 929 Parry & Palmer, and 669 Bourgeau. It was also collected in New Mexico by Wright (1998), and in Arizona by Rothrock (156).

Muhlenbergia calamagrostidea, Kunth. At Parras, Coahuila (1348); the same as 218 Bourgeau, so named by Fournier. Also at San Luis Potosi, an undeveloped form (1068 Schaffner).

Muhlenbergia Clomena, Trin. At San Luis Potosi (1069 Schaffner).

Muhlenbergia Schaffneri, Fourn. Same locality (1065 Schaffner).

Muhlenbergia Berlandieri, Trin. (?) Allied to *M. debilis*, but a stout erect grass, with a long narrow panicle, the glumes about a fourth as long as the flower. At San Luis Potosi (1059 Schaffner); the same as 1992 Wright.

Muhlenbergia —— ? From Mexico, but the locality uncertain: scanty specimens. The same as 1557 Bourgeau and 679 Botteri, the latter named by Munro *M. capillaris*, from which they differ in the slender decumbent geniculate stems and very short and obtuse glumes.

Muhlenbergia scabra. Cespitose, erect, a foot high or less, very scabrous throughout and somewhat rigid: leaves mostly basal, erect, flat, ½ to 1½ lines broad, equalling the culm or shorter, the sin-

gle culm-leaf with a very long sheath; ligule short, fimbriate: panicle contracted, dense, 3 or 4 inches long, the spikelets sessile: lower glumes nearly equal and equalling the flower, thin, scabrous on the keel, the lower acute, the upper obtusish and irregularly toothed, 1½ lines long; flowering glume villous, 2-toothed, bearing a flexuous scabrous rufous awn 6 lines long; palea glabrous. — At San Luis Potosi (1067 Schaffner). A strongly marked species, which appears to be undescribed.

Lycurus phalaroides, HBK. (*L. phleoides*, HBK.) Same locality (1045 Schaffner); 939 Parry & Palmer. The awns in these specimens vary in length from once to twice that of the glumes.

Sporobolus Sabeanus, Buckl. At Sutherland Springs, Texas. This rather common Texan grass has been referred to *S. Coromandelinus*, Kunth, from which it differs notably in its thin unequal glumes and linear leaves. It is nearer to *S. argutus*, Kunth.

Sporobolus atrovirens, Kunth. At San Luis Potosi (1034 Schaffner).

Sporobolus repens, Presl. Same locality (1025 Schaffner); 926 Parry & Palmer. So named at Kew, but differing from 3285 Bourgeau, which was referred by Munro to this species, in the longer and more acuminate lower glumes, which are more than half the length of the flower.

Sporobolus cryptandrus, Gray. Near Ladrillera, San Luis Potosi (Schaffner, without number).

Sporobolus ——? Near *S. Wrightii*, Munro. At San Luis Potosi (1078 Schaffner).

Epicampes ——? Stout, erect (2 to 4 feet high), very pubescent throughout, with a narrow close lead-colored panicle: lower glumes villous, equal, very thin and nerveless, not carinate, usually toothed at the blunt apex; flowering glume similar and equal, a line long, with a slender dorsal awn at the summit; palea villous. — At San Luis Potosi (1023 Schaffner); 933 Parry & Palmer. A very peculiar species. 683 and 1153 Bourgeau ("*E. robusta*, Fourn.") are the same, but glabrous (excepting the flowering glume) or only minutely pubescent.

Epicampes ——? A slender stoloniferous perennial, 1 to 1½ feet high, the purplish spikelets approximate upon the short erect branches of the short panicle: lower glumes acuminate, slightly scabrous on the keel; flowering glume shortly villous (1½ lines long), acuminate, with a short awn between the very short terminal teeth. — In the mountains near San Miguelito (1024 Schaffner).

Agrostis verticillata, Vill. At Parras, Coahuila (2019), and at San Luis Potosi (1022 Schaffner).

Agrostis scabra, Willd. At San Luis Potosi (1033 Schaffner).

Microchloa setacea, R. Br. Same locality (1000 Schaffner); 970 Parry & Palmer.

Chloris cucullata, Bisch. At Sutherland Springs, Texas; a single specimen.

Chloris elegans, HBK. (*C. alba*, Presl.) At Parras, and in the Morales Mountains, (1073 Schaffner); 961 Parry & Palmer.

Chloris submutica, HBK. San Luis Potosi (1074 Schaffner).

Chloris —— ? Very near *C. verticillata*, Nutt., but the flowers narrower and somewhat longer. Same locality (1072 Schaffner); 445 Bourgeau and 723 Botteri.

Bouteloua tenuis, Griseb. At San Luis Potosi (1011, 1012, 1013 Schaffner). These specimens correspond very closely with the description and figure of *Chondrosium tenue*, HBK. (Nov. Gen. 1. 176, t. 57), and especially in their erect habit and convolute-filiform leaves. The tufts are densely cespitose and the root apparently perennial. The South American specimens referred to this species by Grisebach (Pl. Lorentz. 211, and Symb. Fl. Arg. 303) belong rather to *B. simplex*, Lag.

Bouteloua prostrata, Lag. (*Chondrosium humile*, HBK., l. c., 175, t. 56.) A loosely cespitose slender many-stemmed annual, geniculate and decumbent, or procumbent and rooting at base; leaves $\frac{1}{2}$ to 1 line broad, flat or somewhat convolute. A spike in herb. Gray from Lagasca's original specimens, together with the fuller description given by Roemer & Schultes, leaves little doubt respecting the identification of the species. It differs, however, but little from the South American *B. simplex*, Lag. — At Monclova, Coahuila (1358), and at San Luis Potosi (1016 Schaffner); 751 Bourgeau. Collected also in New Mexico by Fendler (939) and by G. R. Vasey.

Bouteloua scorpioides, Lag. (?) Dwarf, cespitose and stoloniferous, glabrous: leaves mostly flat, $\frac{1}{4}$ to $\frac{1}{2}$ line wide: culms shorter than the leaves (2 or 3 inches high), bearing a single loose strongly circinate spike about an inch long: spikelets about 15, mostly in pairs: lower glumes very narrow, acuminate, slightly villous, the upper 3 lines, the lower 2 lines long; flowering glume with 3 slender awns ($\frac{1}{2}$ inch long) and usually 2 or 3 shorter ones at their base; palea bicuspidate; sterile flower bearded at base, 5–6-awned. — At San Luis Potosi (1010 Schaffner). Lagasca's species is known only from his very short and imperfect description.

Bouteloua hirsuta, Lag. (*Chondrosium hirtum*, HBK., l. c., 176, t. 59. *C. fœneum*, Torr. in Emory's Rep. 153, t. 12.) At San Luis Potosi (1018 Schaffner); 943 Parry & Palmer. The typical form, as shown by spikelets in Herb. Gray from Lagasca's original specimens, differing in the less attenuate or sometimes mucronate teeth of the flowering glume from the more common form northward, which can hardly be considered as distinct. The rhachis of the spike is usually conspicuously produced beyond the spikelets, as often occurs also in the northern variety.

Bouteloua oligostachya, Torr. At San Luis Potosi (1014 Schaffner) and near San Rafael (1015 Schaffner); 448 and 666 Bourgeau; 453 Bilimek; 944 Parry & Palmer, a form with pale slender spikes, the lower glumes nearly naked. This species includes *Chondrosium Aschenbornianum*, Nees, and probably also *C. gracile*, HBK., though the last is figured and described as 1-spicate.

Bouteloua polystachya, Torr. At Guadalupe, Texas (1356), and in the San Rafael Mountains (1020 Schaffner); 946 Parry & Palmer; 667 Bourgeau. 1017 Schaffner, from San Luis Potosi, is a dwarf prostrate form, with very short awns. — Var. vestita, with the lower glumes very villous. In the Sierra Madre, south of Saltillo (1357), and near Morales, San Luis Potosi (1019 Schaffner); 943½ Parry & Palmer.

Bouteloua (Chondrosium) trifida, Thurber, Gram. Mex. Bound. ined. A densely cespitose perennial, glaucous, sparingly villous on the margins of the flat or subrevolute rather short leaves: culms slender, erect, a foot high or less: spikes 3 to 5, slender, nearly straight, glabrous, 6 to 9 lines long: lower glumes scarious, narrowly lanceolate, nearly equal; flowers glabrous, the flowering glume cleft into 3 long nearly equal awns; sterile glume also 3-awned. — Somewhat resembling *B. eriopoda*, Torr., in habit. At Monclova, Coahuila (1355); 945 Parry & Palmer. It is also 749, 2020 and 2022 Wright.

Bouteloua racemosa, Lag. At San Luis Potosi (1061 Schaffner); 2755 and 451 Bourgeau. Spikes of 2 to 8 purplish spikelets, the sterile flower reduced to a minute awn, or rarely more developed in the uppermost spikelet, and with the awn exserted. Its farther development into a triple awn, which frequently occurs in the common form of the Northern States (*B. curtipendula*, Torr.), is evidently insufficient for a separation of the species.

Bouteloua bromoides, Lag. (*Heterostegia juncifolia*, HBK., Nov. Gen. 1. 173, t. 54. *Dinebra repens*, HBK., l. c., 172, t. 52. *Bouteloua Humboldtiana*, Griseb. Probably also *Dinebra bromoides*,

HBK., l. c., t. 51.) In the Caracol Mountains, Coahuila (1354), and at San Luis Potosi (1001 to 1003 Schaffner). Somewhat variable in size, habit, and number of spikelets, but the floral characters uniform within narrow limits in all the specimens examined from the United States, Mexico, Panama and the West Indies. The second floret is usually staminiferous, and the third reduced to a rudimentary awn, often very short. It was found in no case 3-awned, as shown in the figure of *Heterostegia juncifolia*. Dr. Palmer's specimens represent a large form with large spikes (the same as 2024 Wright and 450 Bourgeau), corresponding to *Dinebra bromoides*, HBK., though that seems to have been based upon specimens with the second flower less developed than usual. Schaffner's specimens are smaller and decumbent, according in every respect with *Dinebra repens*, HBK.; 534 Bourgeau is the same. There can be little hesitation in referring all to Lagasca's species.

Bouteloua aristidoides, Thurb. At Soledad, Coahuila (1353), and at San Luis Potosi (1062 Schaffner); 941 Parry & Palmer.*

Buchloe dactyloides, Engelm. At San Luis Potosi (1001 and 1021 Schaffner, the staminate and pistillate forms); 922 and 953 Parry & Palmer.

Pappophorum Wrightii. Flowering glume 9-nerved and 9-

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* A study of the material in the Gray Herbarium has led to the following arrangement and identification of the species of *Bouteloua*. The sections are as proposed by Mr. Bentham. The synonymy is complicated, and some of Lagasca's species yet remain uncertain, owing to his very brief and imperfect descriptions. His *B. barbata* appears to belong to the section *Chondrosium*, and *B. juncifolia* and *B. ovata* to *Atheropogon*.

§ 1. *Chondrosium*, Gray. Spikes one to several, linear or oblong, more or less falcate, the usually very numerous spikelets pectinately crowded on one side of the rhachis: terminal empty glume usually 3-awned.

* Spike always solitary.

+ Lower glumes glabrous.

1. B. tenuis, Griseb. (in part). Mexico. See page 176.

2. B. prostrata, Lag. Western Texas and New Mexico to Mexico. See page 176.

3. B. simplex, Lag. Andes of South America.

+ + Lower glumes villous.

4. B. scorpioides, Lag. Mexico. See page 176.

* * Spikes usually 2 or more.

+ Spikes oblong-linear, very dense: lower glumes villous.

5. B. hirsuta, Lag. Pedicel of sterile glume glabrous. — Illinois to Texas, Arizona, and Mexico; Florida. See page 177.

awned; sterile glume 9-awned. — Our only species of the section *Enneapogon*. At Parras (1361); 947 Parry & Palmer; 751 and 2029 Wright, referred to *P. boreale*, Griseb., by Torrey (Pacif. Railroad Rep. 4. 155). Differing from that Siberian species in its more pilose nodes and ligules, longer and narrower panicles, glumes rather more strongly nerved, flowers smaller and more villous, and the seed broader and more ovate. Its resemblance to *P. nigricans*, Br. (*P. pallidum*

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6. B. OLIGOSTACHYA, Torr. Pedicel of sterile glume bearded. — From the Saskatchewan to Texas, Arizona, Southeastern California, and Mexico. See page 177.

+– +– Spikes narrowly linear, dense: glumes usually glabrous.

7. B. POLYSTACHYA, Torr. Flowering and sterile glumes 3-awned, with usually broad lobes between the awns. — From Southern Utah to Texas, Southern California, and Mexico. See page 177.

+– +– +– Spikes more loose and slender: lower glumes glabrous.

++ Flowering and sterile glumes bearded at base, 1-awned: peduncle villous.

8. B. ERIOPODA, Torr. Western Texas and New Mexico.

++ ++ Flowering and sterile glumes naked, 3-awned: peduncle smooth.

9. B. TRIFIDA, Thurber. Western Texas, New Mexico, and Mexico. See page 177.

10. B. BURKEI, Scribner, *ined.* Smaller, the spikes shorter, the flowering glume short-villous, and the awns shorter. Western Texas and New Mexico. (167 and 1427 Berlandier, 3440* Curtiss).

§ 2. *Atheropogon*, Gray. Spikes several or numerous, usually short, straight, not pectinate, the few (3 to 12) spikelets often fascicled: the terminal empty glume 3-awned, or more or less reduced and rudimentary.

11. B. RACEMOSA, Lag. (*B. curtipendula*, Torr.) From New York and Pennsylvania to Wisconsin, and south to Texas, Arizona and Mexico; South America. See page 177.

12. B. BROMOIDES, Lag. From Western Texas to Arizona and Mexico; Central America. See page 177.

13. B. HAVARDI, Vasey, *ined.* Perennial, villous, erect: spikes (4 or 5) half an inch long or less, very silky-villous: lower glume acuminate; flowering glume 3-cleft to the middle, the teeth stout, acuminate, villous; palet as long, acuminate, villous on the back: sterile glume naked, reduced to 3 awns twice longer than the fertile flower, the middle one subulate below, the lateral sometimes villous. — Limpio Mountains, Western Texas; 753 Wright, 1849; Dr. V. Havard, 1881.

14. B. CHONDROSIOIDES, Benth. (*Dinebra chondrosioides*, HBK., Nov. Gen. 1. 173, t. 53.) Mexico. (Not seen.)

15. B. LITIGIOSA, Lag. (*B. porphyrantha*, Wright); and 16. B. ELATIOR, Griseb. West Indies. (The last not seen.)

17. B. CILIATA, Griseb., 18. B. LOPHOSTACHYA, Griseb., and 19. B. NANA, Griseb. South America. (Not seen.)

20. B. PILOSA, Benth. (*Eutriana pilosa*, Hook. f.) Galapagos Islands.

Br.), has been noted, which Australian species has blunter and much more strongly nerved glumes; it is also smoother, and the awns of the still more villous flowering glume are plumose nearly to the summit.

Pappophorum apertum, Munro in herb.; Scribner, Bull. Torr. Club, 9. 148. Glabrous or nearly so, except the villous throat of the sheath, erect or geniculate at base, 2 or 3 feet high: panicle close and spike-like or at length somewhat open, 4 to 9 inches long; spikelets 4–5-flowered, the uppermost flowers abortive: lower glumes very thin and scarious, 1-nerved, acutish, irregularly 2–3-toothed at the apex; flowering glume with 5 green nerves above, irregularly cleft into about 15 naked awns, which are scarcely twice longer than the undivided base (a line long). — At Parras (1360) and Monclova, Coahuila (1362). Near *P. alopecuroides*, Vahl, which has naked sheaths, still longer panicles, longer acuminate glumes, and smaller flowers, the slender awns several times longer than the short base.

Triodia pulchella, HBK. (*Tricuspis pulchella*, Torr.) At Parras, Coahuila (1359), and at San Luis Potosi (1007 Schaffner); 951 Parry & Palmer.

Triodia avenacea, HBK. Running freely. At San Luis Potosi (1008 Schaffner); 950 Parry & Palmer. Also a taller erect form, described as not stoloniferous; same locality (1009 Schaffner).

Triodia mutica, Benth. (*Tricuspis mutica*, Torr. *Uralepis pilosa* and *U. elongata*, Buckl.) Mountains west of Saltillo (2020). What has been named "*Tricuspis trinerviglumis*, Munro," appears to be in every respect the same.

Triodia Texana. (*Tricuspis Texana*, Thurb. in herb.) A slender erect cespitose perennial, 2 feet high, more or less pubescent throughout with short spreading hairs, the nodes glabrous: leaves very narrow (a line broad or less), the sheaths villous at the throat:

§ 3. *Triathera*, Benth. Spikes several, short and narrow, the 1 to 3 slender spikelets closely appressed to the rhachis: terminal glume reduced to a triple awn.

21. B. aristidoides, Thurb. From New Mexico to Southern California and Mexico.

22. B. triathera, Benth. (*Triæna racemosa*, HBK., l. c., t. 61.) Mexico. (Not seen.)

§ 4. *Polyodon*, Benth. Spikes few, short, of few spikelets: flowering glume 3-awned, the 2 or 3 terminal empty ones crowded together and each 3–5-awned.

23. B. Texana, Watson. Texas. See page 196.

24. B. disticha, Benth. (*Polyodon distichum*, HBK., l. c., t. 55.) Peru.

25. B. multiseta, Benth. Brazil. (These not seen.)

panicle very diffuse, the branchlets pubescent; spikelets ovate-oblong, 6–10-flowered; glumes thin, 1-nerved, blunt or shortly mucronate, glabrous; flowering glume villous toward the base upon the 3 green nerves, the middle nerve shortly excurrent between the short teeth; palea glabrous. — At Monclova, Coahuila (1371); also in Western Texas and New Mexico (776, 777 and 2045 Wright).

Triodia Schaffneri. A dwarf cespitose slender annual (?), with fibrous roots, very sparingly villous, the culms 2 or 3 inches high, exceeding the very narrow leaves and bearing a single somewhat 1-sided spike (1 to $1\frac{1}{2}$ inches long) of rather scattered greenish spikelets (8 to 15), which are linear-lanceolate, 6–10-flowered, 2 lines long; rhachis of the spikelets villous-pubescent: lower glumes glabrous, cariuate, 1-nerved, obtusish, finely toothed at the apex; flowering glume glabrous, 3-nerved, the lateral nerves ceasing below the margin, the middle produced into a short awn between the broad obtuse teeth. — In the Escabrillos Mountains, San Luis Potosi (1077 Schaffner). Closely resembling in habit the Cuban *Tricuspis simplex* of Grisebach, and *Diplachne spicata*, Doell, of Brazil. It is clearly a *Triodia*, as the genus is defined by Mr. Bentham.

Leptochloa mucronata, Kunth. At Monclova (1364).

Diplachne fascicularis, Beauv. At San Luis Potosi (1048 Schaffner).

Diplachne dubia, Benth. At the same locality (1079 Schaffner).

Scleropogon Karwinskyanus, Benth. (*Lesourdia Karwinskyana*, Fourn. in Bull. Soc. Bot. France, 27. 102, t. 4, fig. 12.) At San Luis Potosi (1005 Schaffner) and near Morales (1006 Schaffner); 925 and 949 Parry & Palmer. Perennial; very variable in length of awns (1 to 5 inches), their number, etc. Fournier's *Lesourdia multiflora* (l. c., t. 3, 4) appears to be only a short-awned form. As stated by Bentham, both staminate and pistillate spikes occur on the same plant. They are not rarely on the same culm. The plant is common in New Mexico, and was referred by Munro to *Tricuspis*, — by Torrey to *Aristida*.

Arundo Donax, Linn. At Monclova, Coahuila (1345).

Eragrostis reptans, Nees. At Sutherland Springs, Texas (1369); 1154 Parry & Palmer.

Eragrostis oxylepis, Torr. At the same locality (1370).

Eragrostis minor, Host. (*E. poæoides*, Beauv.) At San Luis Potosi (1027 Schaffner).

Eragrostis major, Host. (*E. megastachya*, Link.) At the same locality (1031 Schaffner); 934 Parry & Palmer. Also a form with

few-flowered spikelets (1030 Schaffner); 934½ Parry & Palmer. The genus *Eragrostis* is usually credited to Beauvois (1812), but was first proposed (though without a character) by Host (1809), who referred to it these two species, which represent Beauvois' two genera *Eragrostis* and *Megastachya*.

Eragrostis pilosa, Roem. & Schult. At San Luis Potosi (1028 Schaffner). Identical with 662 Botteri (in Herb. Gray), so named by Munro, and the same as 937 Fendler, and 437, 445, 2594, and 2637 Bourgeau.

Eragrostis lugens, Nees. At San Luis Potosi (1026 Schaffner); 938 Parry & Palmer. A common grass from Texas (and eastward) to Arizona and Mexico, allied to *E. capillaris*, Nees. It is more or less villous on the sheaths and at the nodes of the panicle, or often nearly glabrous, the narrow spikelets of 3 to 5 (rarely 6) flowers, the strongly concave bluntish flowering glumes nearly nerveless. It is 329 Drummond, 936 Fendler, 2050 Wright, 788 Hall ("*E. capillaris*"), Pringle's "*E. pilifera*," 228, 673 and 2643 Bourgeau, and 681 and 682 Botteri (so named by Munro).

Eragrostis Mexicana, Link. At Parras, Coahuila (1367), and at San Luis Potosi (1029 Schaffner); 936 Parry & Palmer. Another common species of Mexico and the region adjacent on the north, allied to *E. tenuis*, Gray, but with blunter and closer glumes. *E. pilifera*, Scheele, is probably the same. It includes 2046, 2047 and 2052 Wright, 604 Rothrock, and 1031, 1305 and 2625 Bourgeau.

Eragrostis Palmeri. Culms numerous, slender, erect from a creeping rootstock, 2 or 3 feet high: leaves narrow (1 or 2 lines wide), becoming revolute: panicle open, glabrous; spikelets sessile or shortly pedicellate upon the slender branches, narrowly lanceolate, acute, 3–8-flowered, 1½ to 2½ lines long: lower glumes acuminate, scabrous on the keel; flowering glume concave, rather faintly 3-nerved, acute, slightly scabrous on the keel toward the top. — At Juraz, on the Sabinas River, Coahuila (1368). Allied to *E. lugens*, but the spikelets mostly nearly sessile and the flowering glumes more strongly nerved.

Briza rotundata, Steud. At San Luis Potosi (1035 Schaffner); 935 Parry & Palmer.

Poa annua, Linn. At Monterey (1365), and San Luis Potosi (1032 Schaffner).

Poa Ruprechtii, Peyr. in Linnæa, 30. 6. In the mountains east of Saltillo (1366). So named at Kew; scarcely, if at all, distinct from *P. flexuosa*, Muhl.

Bromus ciliatus, Linn. At San Luis Potosi (1075 Schaffner). Also a variety, with the panicle sparingly puberulent or glabrate; in the Sierra Madre, south of Saltillo (1372).

Brachypodium cæspitosum, Roem. & Schult. At San Luis Potosi (1076 Schaffner).

The following list of the Ferns and other vascular Acrogens, including all those of the Parry & Palmer collection, has been furnished by Prof. Daniel C. Eaton. The Mosses were determined by the late Thomas P. James, Esq., and the remaining lower cryptogams by Prof. W. G. Farlow.

Acrostichum venustum, Fée. In the San Rafael Mountains (954 Schaffner). Sent under this name from Kew, but not agreeing well with the character of the species as described by Fée.

Acrostichum gratum, Fée. In the San Miguelito Mountains (953 Schaffner); 1007 Parry & Palmer (1009 in some sets).

Polypodium ellipsoideum, Fée. In the San Miguelito Mountains (941 Schaffner).

Polypodium Martensii, Mett. At San Luis Potosi; 973½, in part, and 974½ Parry & Palmer. The bright scales of the rootstock are very showy.

Polypodium plebeium, Schlecht. The dried fronds have a yellowish-green color, and the specimens are of the form called *P. oulolepis* by Fée. In the Sierra Madre, southeast of Saltillo (1373), and in the San Miguelito Mountains (940 Schaffner); 973 and 974 Parry & Palmer. Popularly known as "Calaguala" (as are several other species), and used as an expectorant.

Polypodium cheilosticton, Fée. 973½ Parry & Palmer, in part. This seems to be a good species; it is also 206 and 400 Ghiesbreght, and 18 Mohr, from Orizaba.

Polypodium subpetiolatum, Hook. In the Lerios Mountains, near Saltillo (Palmer, not numbered). Small specimens, which agree best with this species.

Polypodium furfuraceum, Schlecht. In the route from San Luis Potosi to Tampico (1155 Palmer, coll. of 1878–79); Orizaba (31 Mohr).

Polypodium incanum, Swartz. On the Caracol Mountains, Coahuila (1376), and at Guajuco (no number). Also on the route from San Luis Potosi to Tampico (1155½, coll. of 1878–79).

Polypodium aureum, Linn., var. areolatum. In the mountains of San Rafael (942 Schaffner); 972 Parry & Palmer.

Polypodium thyssanolepis, Al. Br. In the mountains near San Luis Potosi (939 Schaffner); 971 Parry & Palmer. Also at Orizaba (36 Mohr), and in the Huachuca Mountains, Arizona (Lemmon).

Polypodium plesiosorum, Kunze. Guajuco, Nuevo Leon (1374).

Polypodium lanceolatum, Linn. In the mountains of San Miguelito (938 Schaffner); 975, 975½ Parry & Palmer.

Gymnogramme pedata, Kaulf. In the mountains of San Rafael (960 Schaffner); collected also by Bourgeau (758), and in Chiapas (315 Ghiesbreght).

Gymnogramme Ehrenbergiana, Klotzsch. In the Escobrillos Mountains (928 Schaffner); 1006 Parry & Palmer. Western Texas to Arizona (Wright, King, Rothrock, Rusby, etc.). This is the *G. hispida* of Mettenius, and *G. podophylla*, Hooker, at least as to the New Mexican specimens. The veins are free in some fronds, and netted in others, from the same lot of specimens. Klotzsch's name has priority over the others.

Gymnogramme tartarea, Desv. In the San Miguelito Mountains (929 Schaffner).

Gymnogramme calomelanos, Desv. At San Luis Potosi; 985 Parry & Palmer.

Notholæna sinuata, Kaulf. At many stations in Coahuila and Nuevo Leon, in a great variety of forms, from the fully developed type down to the smallest with minute entire pinnæ (1400 to 1410); in the Escobrillos Mountains (947 Schaffner); 995, 995½, 996 and 997 Parry & Palmer.

Notholæna brachypus, J. Smith. In the region of San Luis Potosi (998 Parry & Palmer). The hairs of the lower surface are very evident when the scales are removed, and it is perhaps safest to follow Kuhn (Beitr. p. 4) in keeping this separate from *N. squamosa*.

Notholæna ferruginea, Hooker. At Soledad (1399); San Miguelito Mountains (946 Schaffner); 993 and 994 Parry & Palmer.

Notholæna Aschenborniana, Klotzsch. At Lerios in the high mountains east of Saltillo, and near Monterey (without number). This has been attributed to Texas, and was found in 1882 on the Huachuca Mountains of Arizona by J. G. Lemmon.

Notholæna Grayi, Davenport. At Soledad, Coahuila (1388, with white powder, and 1389, with yellowish powder). In the San Rafael Mountains, with fronds ten inches high, the powder white (962 Schaffner).

Notholæna Hookeri, Eaton. At Saltillo, and San Lorenzo de Laguna, Coahuila (1379); 992 Parry & Palmer.

NOTHOLÆNA CANDIDA, Hooker. At Guajuco in Nuevo Leon, and in mountains northeast of Monclova, Coahuila (1380); near Monterey (1381).

NOTHOLÆNA NIVEA, Desv. At Monterey, Nuevo Leon (1386), and in the San Rafael Mountains (961 Schaffner). — Var. FLAVA, Hooker, was collected at Lerios (1387), and a form with smaller and more distant pinnules, the powder white, in the Sierra Madre, south of Saltillo (1385). A *Notholæna* with fronds 3 to 4 inches long, narrower in outline, and with closely placed subcoriaceous pinnules, which may be a form of this species, was found at several places in Coahuila and Nuevo Leon (1382, 1383, 1384). 991 Parry & Palmer is closely allied to these last, but has the short-stalked frond slightly narrowed at the base, and may prove a distinct species. Mr. Davenport pronounces *N. dealbata* only a slender form of *N. nivea*, and the various intermediate forms, now common in herbaria, justify his view.

CHEILANTHES MEIFOLIA. Rootstock short, creeping, chaffy with very narrow acuminate rigid blackish scales: stalks tufted, dark-stramineous, smooth and shining, slender, 6 to 9 inches long; frond 2 or 3 inches long and nearly as broad, deltoid, smooth, 4 or 5 times pinnate and cut into innumerable very narrow linear-acuminate segments: involucres terminal on the segments, orbicular, delicately membranaceous. — At Guajuco, Nuevo Leon (1377). Closely allied to *C. Californica*, but with the involucres terminal and rounded, instead of lateral and crescent-shaped.

CHEILANTHES WRIGHTII, Hooker, var. (?) At Soledad, Coahuila (1378). More finely divided than *C. Wrightii*, and sparingly chaffy along the rhachis, but with the same herbaceous texture and similar involucres.

CHEILANTHES ALABAMENSIS, Hooker. At Georgetown, Williamson Co., Texas (1415); a few specimens were also collected at Guajuco, Nuevo Leon, and in the mountains east of Saltillo.

CHEILANTHES MICROPHYLLA, Swartz. At many stations in Texas, Coahuila and Nuevo Leon, and showing a great variety of forms, some of very large size (1411 to 1414, 1416, 1418 to 1421); 981 and 986 Parry & Palmer. — Var. ASPIDIOIDES, Fée. At Soledad, Coahuila (1417), and in the San Miguelito Mountains (920 Schaffner); 984½ Parry & Palmer.

CHEILANTHES COOPERÆ, Eaton. A few specimens not safely separable from this species were collected by Parry & Palmer (989) in the region about San Luis Potosi.

Cheilanthes viscosa, Link. In the San Miguelito Mountains (926 Schaffner); 990 Parry & Palmer. *Pellaea glauca*, J. Smith, seems in no way different from this.

Cheilanthes tomentosa, Link. At Soledad, Coahuila (1395, 1396). Also a form with very large pinnules from the Caracol Mountains (1391). — Var. Eatoni, Davenport. (*C. Eatoni*, Baker.) At Soledad, Coahuila (1394), at Guajuco, Nuevo Leon (1393), in the mountains east and south of Saltillo (1397, 1398), and in the San Miguelito Mountains (910 Schaffner); 999½ Parry & Palmer.

Cheilanthes gracillima, Eaton. A form much larger than the usual Californian specimens. In the Sierra Madre, south of Saltillo (1390).

Cheilanthes cinnamomea. (*Myriopteris rufa*, Fée.) In the San Miguelito Mountains, San Luis Potosi (911 Schaffner), and in the San Rafael Mountains (914 Schaffner). The species of the *Myriopteris* group of this genus are very perplexing, and in the absence of authentic specimens often very difficult to identify. The plant here referred, not without hesitation, to one of Fée's species, has an elongated cord-like rhizoma, fronds 3 to 8 inches long, 3–4-pinnate with closely set minute bead-like pinnules, smooth and green above, but beneath heavily covered like the rhachis with a coarse entangled tomentum of a bright-ferruginous color. Some of the smallest fronds have the lower pinnules "*écartées*" as Fée describes them. *C. cinnamomea*, as understood, differs from the large form of *C. gracillima* in the elongated rootstock and in the much coarser woolly covering of the pinnules beneath. The name *rufa* is preoccupied in this genus.

Cheilanthes Lindheimeri, Hooker. In Uvalde Cañon, 90 miles northwest of San Antonio, Texas (1392), and in the Escobrillos Mountains (937 Schaffner); 999 and 999½ Parry & Palmer. Schaffner's specimens were marked "*Myriopteris cheiloglyphis*, Fée," a plant unknown in American herbaria; but they do not at all agree with Fée's description.

Cheilanthes myriophylla, Desv. In the Escobrillos Mountains (912 Schaffner), and in the mountains about Morales (915 Schaffner) and San Miguelito (916 Schaffner); 987 and 988 Parry & Palmer.

Cheilanthes Clevelandii, Eaton. In the Escobrillos Mountains (913 Schaffner). The cord-like rhizoma is wanting, but the fronds are evidently like those of the San Diego specimens.

Cheilanthes farinosa, Kaulf. In the San Rafael Mountains (963 Schaffner).

Pellæa rigida, Hooker. On the route from San Luis Potosi to Tampico (1156 Parry & Palmer), and at Orizaba (40 Mohr).

Pellæa Seemanni, Hooker. Fronds larger and more compound than shown in Hooker's figure, but otherwise well agreeing with the character of the species. In the Morales Mountains (923 Schaffner); 979 Parry & Palmer.

Pellæa atropurpurea, Link. At Georgetown, Texas (1425), and (without number) in the Caracol Mountains, and near Saltillo, Coahuila.

Pellæa aspera, Baker. In the mountains northeast of Monclova, Coahuila (1422); also collected sparingly in Southwestern Texas.

Pellæa pulchella, Fée. At Soledad (1423), and at Lerios (1424).

Pellæa marginata, Baker. In the San Miguelito Mountains (921 Schaffner), and San Rafael Mountains (922 Schaffner, a smaller form); 983 Parry & Palmer.

Pellæa ternifolia, Link. In the Escobrillos Mountains (924 Schaffner); 982 Parry & Palmer.

Pellæa cordata, J. Smith. Fine typical specimens, with broad orbicular-cordate pinnules, were gathered in the region of San Luis Potosi by Parry & Palmer (980); in the mountains of San Rafael (959 Schaffner), a form with narrower pinnules; near Saltillo, Coahuila (1426, 1427), a form with still smaller pinnules, evidently passing into the New Mexican and Arizona plant formerly referred to *P. andromedæfolia*, var. *pubescens*, but which Mr. Davenport thinks should rather be joined with this species.

Pellæa flexuosa, Link. In Uvalde Cañon, Texas (1428), also without number from Soledad and Monterey, and in the San Miguelito Mountains (958 Schaffner). This is made a variety of the last species by Mr. Baker, but in well-developed fronds the zigzag habit is very conspicuous, and it is perhaps as well to keep the two apart.

Llavea cordifolia, Lagasca. At Guajuco, Nuevo Leon (1375).

Pteris aquilina, Linn. In Wilson Co., Texas (1429). — Var. lanuginosa, Bongard. In the San Miguelito Mountains (925 Schaffner).

Adiantum Capillus-Veneris, Linn. At Saltillo, and San Lorenzo de Laguna, Coahuila (1430, 1431), and in the mountains of Morales and San Rafael (930, 932 Schaffner); 977 Parry & Palmer, in part.

Adiantum thalictroides, Willd. In the San Miguelito Mountains (931 Schaffner); 977 Parry & Palmer, in part. This is a very

distinct species, as is well shown by Keyserling. Fendler's Venezuelan 71 is also an example of it, as pointed out by Fournier.

Adiantum tenerum, Swartz. At Guajuco, Nuevo Leon (Palmer, without number, a single frond).

Blechnum occidentale, Linn. In the mountains around the city of San Luis Potosi (952 Schaffner).

Asplenium Trichomanes, Linn. At Soledad, Coahuila (1435), and in the San Miguelito Mountains (917 Schaffner).

Asplenium parvulum, Mart. & Gal. At Georgetown, Texas (1436).

Asplenium monanthemum, Linn. In the San Miguelito Mountains (918 Schaffner); 978, 978½ Parry & Palmer. The pinnæ are very often plurisorous, and when this character is seen in fronds of small size, the specimens are not easily distinguished from large forms of *A. Trichomanes*.

Asplenium furcatum, Thunb. In the San Miguelito Mountains (956 Schaffner).

Asplenium pumilum, Swartz. On the route from San Luis Potosi to Tampico (1157 Palmer, coll. of 1878).

Aspidium aculeatum, Swartz. In the Escobrillos Mountains, small but characteristic specimens (950 Schaffner). — Var. Moritzianum. (*A. Moritzianum*, Kunze.) In the San Rafael Mountains (948 Schaffner).

Aspidium patens, Swartz. At Sutherland Springs and Uvalde Cañon, Western Texas (1432, 1433), and in the San Miguelito Mountains (965 Schaffner).

Aspidium athyrioides, Mart. & Gal. (*Nephrodium sphærocarpum*, Hooker.) In the Morales Mountains (951 Schaffner), and in the San Miguelito Mountains, young plants, not yet producing large fronds, but still fruiting (949 Schaffner).

Aspidium trifoliatum, Swartz. At Guajuco (1437).

Cystopteris fragilis, Bernh. In the region of San Luis Potosi (1001, 1002 Parry & Palmer); on the route to Tampico (1158 Palmer, in 1878).

Woodsia mollis, J. Smith. In the San Rafael Mountains (957 Schaffner); also collected by Bourgeau (459).

Woodsia obtusa, R. Br. (?) Sterile fronds only, collected at Bluffton, Burnet Co., Texas (1434).

Woodsia Mexicana, Fée. At Soledad, Coahuila (Palmer, not numbered), and in the San Miguelito Mountains (927 Schaffner); 1000 Parry & Palmer, in some sets having *W. mollis* intermixed.

Lygodium Mexicanum, Presl. On the route from San Luis Potosi to Tampico (1159 Palmer, in 1878).

Aneimia Mexicana, Klotzsch. In the Caracol Mountains, Coahuila (1438); also a few specimens at Guajuco, Nuevo Leon.

Aneimia tomentosa, Swartz, var. fulva, Hooker & Baker. In the Escobrillos Mountains (945 Schaffner).

Aneimia adiantifolia, Swartz. On the route from San Luis Potosi to Tampico (1160 Palmer, in 1878).

Botrychium ternatum, Swartz. Well-developed, nearly typical specimens, in the mountains of San Miguelito (944 Schaffner).

Botrychium Virginianum, Swartz. With the last (943 Schaffner).

Equisetum robustum, Al. Braun. In swamps near Morales (964 Schaffner).

Selaginella rupestris, Spring. In the mountains near San Luis Potosi (933 Schaffner).

Selaginella lepidophylla, Spring. At Monterey (1439), Soledad (1440), and in the Escobrillos Mountains (935 Schaffner).

Selaginella cuspidata, Spring. At Soledad, Coahuila (1441), and in the San Miguelito Mountains (934 Schaffner).

Selaginella pilifera, A. Braun. In the region of San Luis Potosi (1008 Parry & Palmer). This is given on the authority of Mr. Baker in a letter to Dr. Parry. The same letter gives n. 1009 as *S. cuspidata;* but in the set of specimens at New Haven, n. 1009 is an *Acrostichum.*

Selaginella saccharata, A. Braun. From the San Rafael Mountains (936 Schaffner); so named at Kew.

Marsilia Mexicana, A. Braun. In the region of San Luis Potosi (1010 Parry & Palmer). So named by Mr. Baker.

Weissia longirostris, Schwægr. (?) At Guajuco, Nuevo Leon (Palmer).

Ceratodon purpureus, Brid. Mexico (Palmer). Not purple.

Trichostomum strictum, Bruch. (?) At Guajuco (Palmer). Differing in its perichætial leaves and longer operculum.

Trichostomum Schlimii, Muell. (?) Mexico (Palmer).

Barbula cirrhata, Muell. In the Sierra Madre, south of Saltillo (Palmer).

Barbula obtusissima, Muell. Mexico (Palmer).

Ptychomitrium serratum, Schimp. Mexico (Palmer).

Bryum argenteum, Linn. In the Caracol Mountains, Coahuila (Palmer).

Symblepharis helicophylla, Montg. (?) At Guajuco (Palmer). Sterile specimens. The vaginate portion of the leaf has a delicate margin of slender cells, which increase gradually in number toward the middle, from two to five.

Bartramia Gardneri, Muell. (?) At Morales, San Luis Potosi (Schaffner).

Pogonatum cucullatum, Hampe. At San Miguelito (Schaffner).

Neckera Ehrenbergii, Muell. Same locality (Schaffner).

Cylindrothecium compressum, Bruch. & Schimp. (?) Mexico (Palmer).

Pylaisæa intricata, Bruch. & Schimp. In the Sierra Madre, south of Saltillo (Palmer).

Hypnum adnatum, Hedw. (?) Same locality (Palmer).

Hypnum Hueflerii, Juratz. Mexico (Palmer).

Metzgeria pubescens, Raddi. In the San Miguelito Mountains (Schaffner).

Madotheca Mexicana, Hampe. On trees near Morales (Schaffner).

Nitella clavata, A. Braun. At San Luis Potosi (Schaffner).

Nitella Asagræana, Schaffner. Same locality (Schaffner).

Dothidea perisporioides, B. & C. Same locality (Schaffner).

Ustilago Maydis, Corda. Same locality (Schaffner).

The following additions and corrections are to be made in the previous list of the *Polypetalæ* of these collections.

Cedrela Dugesii. The fruit of the uncertain species mentioned on page 335, since received from Prof. Dugès, permits a fuller description of this as an apparently very distinct species. Leaflets 3 pairs or more, lanceolate with a long slender acumination, 4 to 6 inches long, rather thin, entire, the veins rusty and slightly pubescent beneath: panicle rather dense and contracted, the pedicels shorter than the calyx; corolla 2½ lines long, pubescent: fruit oblong, about an inch long: seeds with the wing scarcely as long as the body, 3 lines broad or less.

Colubrina Texana, Gray. At Uvalde, Texas (170), and San Lorenzo de Laguna, Coahuila (169).

Indigofera leptosepala, Nutt., var. brevipes. At Monterey (236). In some of the sets this will be found to be *Astragalus Nuttallianus*. — Var. (?) angustata. In the Sierra Madre, south of Saltillo (255).

Hoffmanseggia Jamesii, Torr. & Gray. At Saltillo (269).

Calliandra eriophylla, Benth. In the mountains north of Monclova (319).

Cotoneaster denticulata, HBK. In the Sierra Madre (785).

Cuphæa cyanea, DC. In the mountains east of Saltillo (775).

Turnera diffusa, Willd., var. aphrodisiaca, Urban, Jahrb. Bot. Gard. Berl. 2. 127. *T. aphrodisiaca*, Ward, is thus referred by Urban, with very good reason.

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2. *Descriptions of some New Western Species.*

Greggia linearifolia. With the habit of *G. camporum*, but the leaves linear, attenuate to the base, entire, 1 or 2 inches long; pod narrower, 6 lines long or less, and less than a line broad; style shorter (not a line long), and stigmas smaller. — At Presidio on the Rio Grande (Wright, in 1848); bluffs of Delaware Creek, Western Texas (Dr. V. Havard, 1882); and at Parras, Coahuila (46 Palmer, 1880), referred to *G. camporum* as a variety.

Sagina crassicaulis. Stout, much branched, glabrous, apparently perennial with slender rootstocks, decumbent: leaves broadly linear, pungent, fleshy, 2 to 6 lines long, united at base into a broad scarious sheath: pedicels often 4 to 8 lines long: flowers mostly erect, large, the sepals exceeding the petals, over a line long: styles very short: capsule ovate, scarcely exserted. — On Dillon's Beach, Marin County, California (J. W. Congdon, June, 1880). Resembling *S. maxima*, Gray, of Japan.

Montia Howellii. A very slender diffuse annual, the stems $\frac{1}{2}$ to 3 inches long, procumbent and rooting: leaves very narrowly linear-spatulate, 2 to 4 lines long, with a dilated scarious clasping base, very rarely opposite, usually opposite to a triangular scarious clasping bract which subtends a few- (usually 3-) flowered cluster; pedicels shorter than the leaves, reflexed in fruit: flowers very small; petals 3 or 4, unequal, slightly united at base, the longer ones slightly exserted: stamens 3, hypogynous: stigmas 3, short: capsule ovate, about equalling the calyx, 3-valved, 3-seeded: seeds black, smooth and shining. — Collected on Sauvies Island, in the Willamette River, Oregon, by Joseph and Thomas Howell, who recognized most of its peculiarities. It agrees in most of its characters with *Montia* as distinguished from *Claytonia*, though some species of the latter genus (as *C. dichotoma* and *C. linearis*) have often but 3 stamens and the petals unequal.

The leaves are occasionally opposite, as in *M. fontana*, which in turn sometimes has one of a pair reduced to a scarious bract. The valves of the capsule in this species are shown by the microscope to be beautifully cancellated.

Astragalus Matthewsii. Very shortly caulescent and cespitose, villous-pubescent with rather short subappressed hairs: leaflets about 12 pairs, obovate to oblong-obovate, 2 to 5 lines long: peduncles equalling the leaves, bearing loose racemes with green lanceolate bracts: calyx campanulate, the lanceolate acuminate teeth half the length of the tube; corolla purple, about 9 lines long, twice longer than the calyx: pod inflated, membranous, 2-celled, sessile, broadly ovate, acuminate, densely white-villous, 9 lines long. — At Fort Wingate, New Mexico; collected by Dr. W. Matthews, U. S. A. Allied to *A. Bigelovii*.

Astragalus (Homalobus) Wingatanus. Near *A. multiflorus*, scarcely 6 inches high, somewhat canescent with appressed pubescence: leaflets 4 to 6 pairs, narrow, glabrate: calyx short and shortly toothed; corolla purplish, 3 lines long: pod as in *A. multiflorus* but sessile, obtuse or somewhat narrowed at base, rather more acute at the apex. — At Fort Wingate, New Mexico (Dr. W. Matthews, 1882); collected in New Mexico also by Dr. E. Palmer in 1870 (14 and 61).

Astragalus hypoxylus. Perennial, with a prostrate branching woody base and short slender herbaceous branches: leaves glaucous, canescent with a fine appressed pubescence; leaflets 4 to 6 pairs, obovate to oblong-obovate, obtuse, 1 to 3 lines long; stipules distinct, triangular-ovate: peduncles slender, exceeding the leaves (3 inches long); racemes short and close: calyx-teeth narrow, equalling the short-campanulate tube; corolla 3 lines long: pod sessile, chartaceous, oblong and turgid, sulcate on the back and 2-celled by the intrusion of the dorsal septum, 3 or 4 lines long. — Collected at Maloney's Ranch, in the Huachuca Mountains, Southern Arizona, by J. G. Lemmon, in July, 1882. Allied to *A. Cobrensis* and *A. Arizonicus*.

Spiræa (Filipendula) occidentalis. An herbaceous perennial, 2 to 6 feet high, the simple stem glabrous or nearly so: leaves appressed-silky on the veins beneath, 5–7-lobed, the lobes acute or acuminate, doubly lacerate-toothed, the petiole with 1 to 5 pairs of reduced ovate to narrowly lanceolate toothed leaflets; stipules broad: inflorescence a compound cymose panicle, pubescent with short somewhat appressed hairs: petals white, elliptical, sessile, 2 or 3 lines long: carpels about 9, erect, narrowly lanceolate, long-stipitate, beaked by the elongated style and villous (especially on the margin) from the

summit of the style to the base. — Rocky banks of the Trask River, Tillamook County, Oregon; discovered by T. Howell and L. F. Henderson, in July, 1882. Near *S. Kamtschatica*, Pall., from which it differs in its pubescence, more developed petiolar leaflets, sessile petals, longer styles, and more villous carpels.

Ribes ambiguum. Intermediate between *R. Menziesii* and *R. Lobbii*, having the spinose fruit of the one and the obtuse anthers of the other. Glandular-pubescent and villous, especially on the petioles and peduncles: leaves larger, 1 to 2 inches in diameter; stipular spines rather short: flowers smaller, the calyx 3 or 4 lines long above the ovary, greenish, more or less villous: stamens equalling or scarcely exceeding the white petals, the light-colored anthers very small, obtuse, smooth: fruit densely covered with long spines. — On Scott Mountains, Northern California, at 8,000 feet altitude, trailing over rocks, with the flowers very villous (Rev. E. L. Greene, August, 1876); on Mount Adams, Washington Territory, at 5,000 feet altitude (W. N. Suksdorf, 1882).

Sedum radiatum. Stems from a branching rooting caudex, decumbent at base, 3 to 6 inches high: leaves oblong to oblong-ovate, obtuse or only acutish, somewhat clasping by the narrower base, 3 to 6 lines long, delicately nerved when dry: flowers sessile; sepals short and triangular; petals yellow, narrowly lanceolate, acuminate, 3 lines long: carpels broad and with the beaks abruptly divergent and horizontal in fruit. — In the Coast Ranges of California; on Gavillan Peak, Monterey County (742 Brewer); Sonoma County (J. W. Congdon); Trinity County (V. Rattan); Mendocino County (6566 Bolander). Resembling *S. Douglasii* (for which it has been mistaken, and which has not yet been found in California), but with very different foliage. This is the fourth species of the group with divaricately beaked carpels.

Gayophytum pumilum. Closely resembling low forms of *G. racemosum*, 6 inches high or less, glabrous or very nearly so, and somewhat strict: flowers less than a line broad: capsule erect, very shortly pedicellate, 6 lines long by half a line broad or more, the numerous seeds oblique in the cells. — From San Bernardino County, California, to Washington Territory; collected by Dr. Torrey, Kellogg, Lemmon, Parry, Rattan, and Suksdorf. In *G. racemosum* the capsules are more narrowly linear, usually fewer-seeded, and the seeds erect or nearly so.

Eryngium discolor. Stem erect, very slender (2 feet high), simple and monocephalous, or rarely sparingly branched: radical leaves

long-petiolate, oblong to narrowly oblanceolate, thin, slightly crenate; the cauline few, sessile, linear-lanceolate, acutely or spinosely toothed: head oblong-ovate (about 6 lines long), shorter than the 10 or 12 linear-lanceolate bracts, which are white above and green beneath, with a single spinose tooth on one or both sides; head crowned with 3 or 4 similar bracts; floral bracts very narrow and spinosely acuminate. — At Cienega in the Huachuca Mountains, Southern Arizona, growing in water; J. G. Lemmon, September, 1882. Allied to *E. Mettaueri*, Wood.

Suæda minutiflora. Perennial (?), glabrous, the herbaceous stems erect, 2 feet high, the branches mostly short and suberect: leaves linear, not narrowed at base, 1 or 2 inches long, the upper broader and clasping at base; flower-bracts lanceolate to deltoid: inflorescence mostly crowded, the very small flowers clustered in the axils; perianth mostly scarious, not appendaged: seed less than half a line broad. — At Santa Barbara, abundant in a marsh near the sea, first collected by Mrs. Elwood Cooper, in 1879; also at Los Angeles, by Rev. J. C. Nevin, 1882.

Eriogonum Shockleyi. Closely allied to *E. Kingii*, dwarf and very densely cespitose, densely tomentose throughout: leaves oblanceolate and petiolate, 6 lines long or less: scapes less than an inch high: heads globose, compact; involucres tomentose, scarious at base, the lobes herbaceous: flowers included, rounded at base, pubescent or nearly glabrous below, villous within, the narrowly oblong segments white with a green midvein; filaments and elongated styles exserted. — At Candelaria, Esmeralda County, Nevada, on bare rocks at 6,500 feet altitude; discovered by W. H. Shockley, June, 1882. Differing from *E. Kingii* in its shorter peduncles, more compact globose heads, smaller included flowers, narrower perianth-segments, more elongated styles, and less sharply angled akenes.

Eriogonum Havardi. Perennial, with a very short branching caudex: leaves all at the base, oblong-lanceolate, acute or acuminate, petiolate, densely tomentose beneath and silky above, 1 to 1½ inches long: peduncles slender, 1 or 2 feet high, glabrous, sparingly dichotomous above; bracts small and ternate: involucres solitary, long-pedicellate, or sessile at the forks, broadly turbinate and nerved, with short erect teeth, somewhat pubescent or glabrate, a line long or more: perianth densely silky, with narrow acute lanceolate segments, a line long, yellowish: akene glabrous, ovate, acuminate, a line long. — Collected in the Chenati Mountains, Western Texas, by Dr. V. Havard, U. S. A., 1882. An anomalous species, resembling *E. lachnogynum*,

but with the reduced strictly ternate braets of the subgenus *Ganysma*, smoother involucres, narrower perianth-segments, and glabrous akenes.

Euphorbia (Zygophyllidium) Plummeræ. Erect and slender, from a subglobose or fusiform tuberous root, dichotomously branched, puberulent, about a foot high: leaves opposite, the lowest oblong, the rest linear, an inch long by 1 or 2 lines wide, abruptly narrowed to a short slender petiole; glandular stipules obsolete: involucres mostly solitary, narrowly campanulate, half a line long and about equalling the pedicels; lobes quadrate, inflexed, lacerate; gland-appendages half as long as the involucre, rounded, entire: styles slender, united at base, bifid: capsule glabrous, depressed, 2½ lines broad: seeds globose, without caruncle, smooth and dark-colored with a thin lighter-colored scurfiness, a line in diameter. — On the "Sentinel" in Tanner's Cañon, Huachuca Mountains, Southern Arizona; collected by J. G. Lemmon and Mrs. S. Plummer Lemmon, July, 1882 (n. 2874). Closely resembling forms of *E. biformis* (see page 151), excepting in the slender styles, the larger capsules, and different seeds.

Microstylis purpurea. Stem a foot high, with an obtuse purplish sheath at base and a single clasping acutish oblong-ovate to oblong leaf, 3 inches long: raceme elongated, at length loosely flowered; pedicels 1 to 1½ lines long: flowers small, purple, the linear-oblong sepals 1½ lines long and exceeding the linear petals; lip triangular-lanceolate, slightly auricled at base: capsule round-ovate, about 2 lines long, exceeding the pedicels. — In Tanner's Cañon, Huachuca Mountains, Southern Arizona; J. G. and S. P. Lemmon, July, 1882 (n. 2881).

Microstylis corymbosa. Stem 6 to 8 inches high, with 1 or 2 obtuse greenish sheaths at base, and a single acute or acutish clasping cordate-ovate leaf, 2 to 4 inches long: raceme contracted (½ to 1 inch long), the pedicels 3 or 4 lines long, becoming in fruit 6 lines long: flowers pale greenish yellow, the oblong acutish sepals 1½ lines long, exceeding the very narrowly linear sepals; lip broadly cordate, rather abruptly long-acuminate, not auricled at base, thin: capsule oblong-ovate, 3 or 4 lines long. — In the same locality; J. G. Lemmon, July, 1882 (n. 2882).

Allium Plummeræ. Bulb oblong, rhizomatous: leaves flat, linear, 2 or 3 lines wide, nearly equalling the scape, which is a foot high or more: umbel erect, few-flowered; bracts 2, long-acuminate, an inch long and equalling the slender pedicels: corolla white, the lanceolate acute segments 4 lines long, slightly exceeding the stamens: capsule prominently crested. — In the same locality and by the same enthusiastic and indomitable collectors (n. 2893).

Bouteloua (Polyodon) Texana. Perennial, densely cespitose, glabrous or loosely villous, the culms erect or geniculate at base, ½ to 1 foot high: leaves shorter than the culms, flat or revolute, sometimes pubescent on the upper surface: spikes 5 to 10, secund, cuneate, about 6 lines long with the awns; spikelets 4 to 6, crowded on the very short rhachis: glumes short-villous or pubescent on the back, very unequal, the lower bifid and the midnerve produced into an awn; flowering glume 3-awned and with a broad tooth on each side of the middle awn; sterile flowers 2 or 3, consisting of more or less similar 3-awned glumes. — Frequent from Arkansas to Western Texas (1535 Berlandier; 340 and 374 Drummond; 732 Lindheimer; 752 Wright; 771 Hall, distributed as *B. affinis*); collected also by Reverchon and others. It appears to be the *Ægopogon rigidisetus* of Steudel, and is perhaps the "*Atheropogon affinis*, Fournier," mentioned by Bentham.

INDEX TO GENERA.

Abies, 158.
Acalypha, 154.
Acerates, 114.
Acerates, 114.
Achyronychia, 143.
Acleisanthes, 143.
Acnide, 144.
Acrostichum, 183.
Actinella, 109.
Actinomeris, 106.
Adiantum, 187.
Ægopogon, 173.
Agassizia, 109.
Agave, 161.
Ageratum, 100.
Agrostis, 176.
Allionia, 142.
Allium, 165, 195.
Alternanthera, 144.
Amarantus, 143.
Amblyolepis, 109.
Ambrosia, 104.
Anagallis, 112.
Andropogon, 173.
Aneimia, 189.
Anemopsis, 148.
Anisacanthus, 133.
Anthericum, 164.
Antigonon, 148.
Antiphytum, 121.
Antirrhinum, 129.
Aphanostephus, 102.
Aphyllon, 132.
Aplopappus, 102.
Apocynum, 113.
Arbutus, 111.
Arctostaphylus, 111.
Argythamnia, 153.
Aristida, 174.
Aristolochia, 148.
Artemisia, 109.
Arundo, 181.
Asclepias, 114.
Asclepiodora, 114.
Aspidium, 188.
Asplenium, 188.
Aster, 103.
Astragalus, 190, 192.
Atriplex, 146.
Baccharis, 103.
Bahia, 107.
Baileya, 109.
Barbula, 189.
Barroettia, 101.
Bartramia, 190.
Basanacantha, 98.
Beaucarnea, 163.
Berlandiera, 104.
Bernardia, 153.
Beschorneria, 161.
Bidens, 107.
Bigelovia, 102.
Bignonia, 132.
Blainvillea, 106.
Blechnum, 188.
Bletia, 159.
Bœhmeria, 155.
Boerhaavia, 142.
Bomaria, 161.
Borrichia, 105.
Botrychium, 189.
Bouchetia, 129.
Boussingaultia, 147.
Bouteloua, 176, 178.
Bouvardia, 96.
Brachypodium, 183.
Bravoa, 161.
Brickellia, 101.
Briza, 182.
Bromus, 183.
Brunella, 140.
Bryum, 189.
Buchloe, 178.
Buchnera, 130.
Buddleia, 116.
Bumelia, 112.

Cacabus, 127.
Calliandra, 191.
Callicarpa, 136.
Callisia, 167.
Callitriche, 154.
Calochortus, 165.
Calophanes, 133.
Calyptrocarpus, 106.
Campanula, 111.
Cannabis, 105.
Capsicum, 127.
Carex, 172.
Carlowrightia, 133.
Carya, 155.
Castilleia, 131.
Cedrela, 190.
Cedronella, 140.
Celosia, 143.
Celtis, 155.
Cenchrus, 173.
Centaurea, 110.
Centunculus, 112.
Cephalanthus, 96.
Ceratodon, 189.
Ceratophyllum, 157.
Cestrum, 128.
Chætopappa, 102.
Chamæsaracha, 126.
Chaptalia, 110.
Cheilanthes, 185.
Chenopodium, 145.
Chilopsis, 132.
Chlamydostylis, 160.
Chloris, 176.
Chondrosium, 176.
Chrysactinia, 108.
Chrysopsis, 102.
Cladothrix, 144.
Claytonia, 191.
Cnicus, 110.
Coix, 173.
Coldenia, 119.
Colubrina, 190.
Commelina, 166, 167.
Conobea, 130.
Conopholis, 131. [Should follow *Aphyllon*, p. 132.]
Convolvulus, 123.
Conyza, 103.
Cooperia, 161.
Cordia, 119.
Coreopsis, 106.
Corispermum, 146.
Corrigiola, 143.
Cotoneaster, 191.
Cranichis, 159.
Cressa, 124.
Croton, 152.
Cunila, 136.
Cuphæa, 191.

Cupressus, 157.
Cuscuta, 124.
Cylindrothecium, 190.
Cyperus, 169.
Cypripedium, 159.
Cystopteris, 188.

Dasylirion, 163.
Datura, 128.
Dianthera, 133.
Dichætophora, 102.
Dichondra, 124.
Dicliptera, 133.
Dicranocarpus, 104.
Dieraurus, 145.
Dicromena, 171.
Dinebra, 177.
Diodia, 98.
Dioscorea, 163.
Diospyros, 112.
Diplachne, 181.
Dothidea, 190.
Dysodia, 108.

Echeandia, 164.
Echites, 113.
Eclipta, 105.
Ehretia, 119.
Eleocharis, 170.
Elytraria, 133.
Encelia, 106.
Engelmannia, 104.
Ephedra, 157.
Epicampes, 175.
Equisetum, 189.
Eragrostis, 181.
Erigeron, 103.
Eriogonum, 194.
Eritrichium, 121.
Eryngium, 193.
Erythræa, 117.
Ethcosanthes, 167.
Eupatorium, 100.
Euphorbia, 148, 195.
Eurotia, 146.
Eustoma, 117.
Eutriana, 179.
Evax, 103.
Evolvulus, 123.

Fimbristylis, 171.
Flaveria, 107.
Florestina, 107.
Flourensia, 106.
Forestiera, 113.
Franseria, 104.
Fraxinus, 113.
Fröelichia, 114.
Fuirena, 171.

Gaillardia, 109.
Galinsoga, 107.
Galium, 99.
Gayophytum, 193.
Gentiana, 117.
Gerardia, 131.
Gilia, 117.
Glyphosperma, 164.
Gnaphalium, 103.
Gochnatia, 110.
Gomphrena, 144.
Gonolobus, 115.
Gossypianthus, 144.
Greggia, 191.
Grindelia, 101.
Guilleminea, 141.
Gutierrezia, 101.
Gymnogramme, 184.
Gymnolomia, 105.
Gymnosperma, 101.
Gymnosperma, 107.

Halenia, 117.
Haploesthes, 109.
Hebanthe, 144.
Hechtia, 159.
Hedeoma, 136.
Hedyotis, 98.
Helenium, 108.
Helianthella, 106.
Helianthus, 105.
Heliopsis, 105.
Heliotropium, 120.
Hemicarpha, 171.
Hemiphylacus, 164.
Herpestis, 130.
Hesperanthes, 164.
Heteranthera, 166.
Heterotheca, 102.
Heteropogon, 173.
Heterostegia, 177.
Heterotoma, 111.
Hexalectris, 159.
Hieracium, 110.
Hippeastrum, 161.
Houstonia, 97.
Hymenatherum, 108.
Hymenoclea, 104.
Hymenopappus, 107.
Hyoscyamus, 128.
Hypnum, 190.
Hypoxis, 161.

Ilysanthes, 130.
Indigofera, 190.
Iresine, 145.
Iris, 160.
Isanthus, 140.
Iva, 104.

Jacobinia, 133.
Jatropha, 151.
Juglans, 155.
Juncus, 167.
Juniperus, 158.
Kuhnia, 101.

Lamoreuxia, 132
Lantana, 134.
Lauranthus, 148.
Leghia, 105.
Lepachys, 105.
Lesourdia, 181.
Leucophyllum, 129.
Liatris, 101.
Limosella, 130.
Lippia, 134.
Litsea, 148.
Llavea, 187.
Lobelia, 110.
Loselia, 117.
Lonicera, 96.
Lycium, 127.
Lycurus, 175.
Lygodesmia, 110.
Lygodium, 189.

Macrosiphonia, 113.
Madotheca, 190.
Malaxis, 159.
Mallostoma, 98.
Marrubium, 140.
Marsilia, 189.
Martynia, 132.
Maurandia, 129.
Melampodium, 104.
Menodora, 112.
Mentha, 136.
Metastelma, 115.
Metzgeria, 190.
Microchloa, 176.
Micromeria, 136.
Microstylis, 159, 195.
Mikania, 101.
Milla, 165.
Mimulus, 130.
Mirabilis, 142.
Mitracarpium, 98.
Mitreola, 116.
Monarda, 140.
Montia, 191.
Moquinia, 110.
Muhlenbergia, 174.
Myriopteris, 186.

Nama, 118.
Neckera, 190.
Nectouxia, 127.
Nemastylis, 160.
Nephrodium, 188.
Nicolletia, 108.
Nicotiana, 128.
Nierembergia, 129.
Nitella, 190.
Nolina, 163.
Nothokæna, 184.
Nothoscordum, 165.
Nyctaginea, 142.

Obione, 146.
Oldenlandia, 97.
Oligogyne, 106.
Omphalodes, 121.
Oplismenus, 173.
Orthocarpus, 132.
Oxybaphus, 142.

Palafoxia, 107.
Palafoxia, 107.
Panicum, 172.
Panicum, 173.
Pappophorum, 178.
Parietaria, 155.
Paronychia, 143.
Parthenium, 104.
Paspalum, 172.
Pectis, 108.
Pedicularis, 132.
Pellæa, 187.
Pellæa, 186.
Pentacæna, 143.
Pentstemon, 129.
Peperomia, 148.
Perezia, 110.
Persea, 148.
Petunia, 129.
Phacelia, 117.
Philibertia, 113.
Phlox, 117.
Phyllactis, 99.
Phyllanthus, 151.
Physalis, 126.
Physostegia, 140.
Phytolacca, 147.
Pinaropappus, 110.
Pinguicula, 132.
Pinus, 158.
Plantago, 141.
Platanthera, 159.
Platanus, 155.
Pluchea, 103.
Plumbago, 112.
Plumiera, 113.
Poa, 182.
Pogonatum, 190.
Poliomintha, 137.
Polygonum, 147.
Polyodon, 180.
Polypodium, 183.
Polypremum, 116.
Polypteris, 107.
Populus, 156.
Porophyllum, 107.
Potamogeton, 169.
Pteris, 187.
Pterocaulon, 103.
Ptychomitrium, 189.
Priva, 135.
Pseudotsuga, 158.
Psilactis, 102.

Pylaisæa, 190.
Pyropappus, 110.

Quercus, 155.

Randia, 98.
Relbunium, 99.
Rhagadiolus, 110.
Rhynchospora, 171.
Ribes, 193.
Richardsonia, 99.
Riddellia, 107.
Rivina, 147.
Roulinia, 115.
Ruellia, 133.
Rumex, 147.

Sagina, 191.
Salazaria, 140.
Salix, 156.
Salvia, 137.
Salviastrum, 140.
Samolus, 112.
Sanvitalia, 105.
Saracha, 127.
Sartwellia, 107.
Schaffnera, 173.
Schœnocaulon, 166.
Schœnoprasum, 165.
Scirpus, 171.
Sclerocarpus, 105.
Scleropogon, 181.
Scleropus, 143.
Scutellaria, 140.
Sebastiana, 154.
Sedum, 193.
Selaginella, 189.
Selinocarpus, 143.
Senecio, 109.
Senkenbergia, 142.
Setaria, 173.
Seymeria, 131.
Silphium, 104.
Siphonoglossa, 133.
Sisyrinchium, 160.
Smilax, 163.
Solanum, 125.
Solidago, 102.
Speiranthes, 159.
Spermacoce, 99.
Spiræa, 192.
Sporobolus, 175.
Stachys, 140.
Stemodia, 130.
Stenandrium, 133.
Stenorhynchus, 159.
Stevia, 100.
Stillingia, 154.
Stipa, 174.
Suæda, 147, 194.
Symblepharis, 190.

Symphoricarpus, 96.
Synedrella, 106.

Tagetes, 108.
Taraxacum, 110.
Taxodium, 158.
Tecoma, 132.
Teloxys, 145.
Tetraclea, 140.
Tetragonotheca, 105.
Tetramerium, 134.
Teucrium, 141.
Thelesperma, 106.
Thevetia, 113.
Tigridia, 160.
Tillandsia, 159.
Tinantia, 166, 168.
Tournefortia, 120.
Townsendia, 102.
Trachypogon, 173.
Tradescantia, 166, 168.
Tragia, 154.
Tragus, 173.
Triæna, 180.
Trichostomum, 189.
Tricuspis, 180.
Tridax, 107.
Triodia, 180.
Trixis, 110.
Turnera, 191.

Ulmus, 155.
Uralepis, 180.
Urochloa, 173.
Urtica, 155.
Ustilago, 190.
Utricularia, 132.

Valeriana, 99.
Varilla, 105.
Verbascum, 129.
Verbena, 135.
Verbesina, 106.
Vernonia, 100.
Veronica, 130.
Viburnum, 96.
Viguiera, 105.
Vincetoxicum, 115.

Weissia, 189.
Wigandia, 118.
Woodsia, 188.

Xanthisma, 102.

Yucca, 163.

Zaluzania, 105.
Zebrina, 167.
Zephyranthes, 161.
Zexmenia, 105.
Zinnia, 104.
Zygadenus, 165.